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5

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RUNNING**

WITH HOLLY RUSH

**10 WAYS TO
MAX YOUR TRI
TRAINING TIME**

**10 CROSSFIT
WORKOUTS**



IT'S BONKERS!
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PLUS 700 UP: MARATHON MAN STEVE EDWARDS

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**OUTDOOR
FITNESS
NOW ON
THE IPAD!**

**3 PEAKS
CHALLENGE
PAGE 42**

Welcome December



Make your life count. These four words have huge meaning, in all aspects of what we do day-in-day-out and year-in-year-out. Training for, attempting and achieving in the fitness, endurance and

competitive sports worlds is a definite life area where success (and this has many levels) provides so much to make us feel that we have achieved and have personally "counted".

If we slightly change make your life count to "make it count" then we have another mantra that can equally motivate, perhaps on a less philosophical level to make your life count. Before you get on your bike or out onto the roads for a run, saying (and continuously reminding yourself) to make it count will help empower you to have a great ride or run, and a fun one at that - the implied meaning of those three words should not just be hard-edged, objective or numerical.

Numbers of course crop up a great deal and in

many different ways in all forms of training – mph, kph, kcal/hr, watts and so on. Damian Hall had an MOT on his running body; the numbers he was provided with made him re-calculate how he trained, page 64. Not only did Damian's numbers add up to a fail (of course remedies were provided for a "re-test") but he was also advised to use the numbers associated with bpm's to base his training on. Accelerate, the "testing station", advised our man to always use a heart rate monitor to manage his efforts. Good advice of course when it comes to ensuring consistency across training sessions.

Calculating effort is crucial to all endurance activities, for example, go off too fast and you could encounter "the wall" far too soon. For 700 marathon man Steve Edwards, the wall must have been an issue for pro-longed calculus, see page 50. However, for someone who has run over 300, sub 3:15 marathons as well, it's obvious he's got his sums right. And to continue to please any math's teachers, Edwards' running efforts

amount to the equivalent of running a marathon every 14 days for the last 27 (yes, twenty-seven) years. He's made it all count.

As our cover lines shout out, and through my attempts to bring them into this editorial, our December issue has a very strong numerical theme: 10 ways to become an adventurer with our cover model and adventurer of the year Alastair Humphreys, page 30; 10 Crossfit® workouts with extreme sailor James Wierzbowski, page 60; 10 ways to max your tri training with Vicky Holland, page 74; and 15 ways to eat like a pro cyclist with Team Tinkoff-Saxo, page 88. I could add a few more number-themed articles to this list but by now you might be feeling like you're back at school and it's the end of a long math's lesson... so I'll stop and provide further thought to both make your life count and make it count:

Have a great Christmas and a very happy, very fit, successful and adventurous New Year!

JOHN SHEPHERD Editor

HEROES OF THE MONTH



CHRIS PETRIE, North Pole Marathon runner, withstood temperatures of -41C and completed a race, over 2.2-mile laps that finished four miles away from its geographical starting and finishing point. **P46.**



STEVE EDWARDS. The 700-marathon man had to be included here. His achievements are all the more remarkable given that he used to get out of school cross-country races. **P50.**



THREE PEAKS CYCLO-CROSS TRIO. Apparently tackling Ingleborough, Wharfedale and Pen-y-ghent makes for a bonkers idea. Well, our three made it round, so are they less or should that be more bonkers now?! **P42.**

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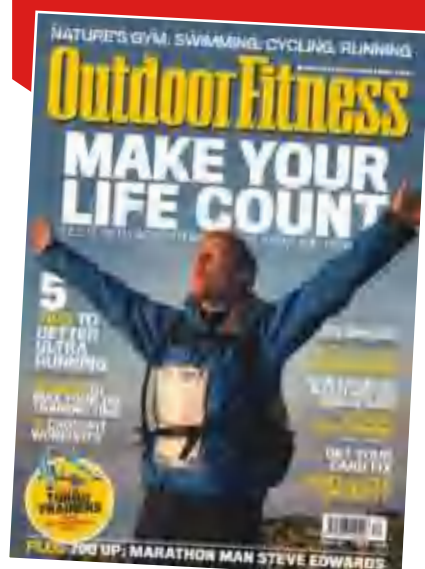
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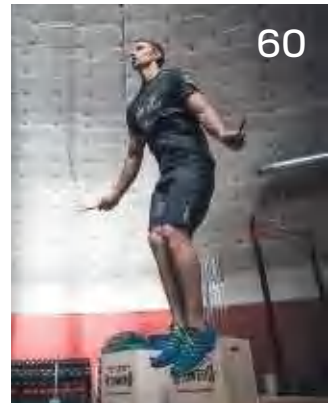
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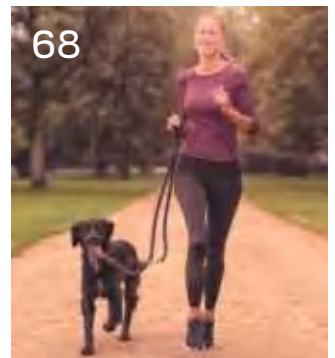
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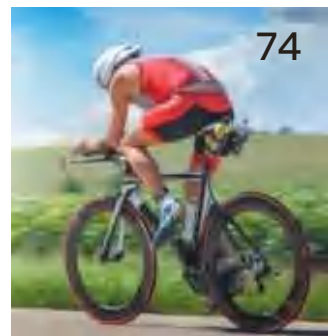
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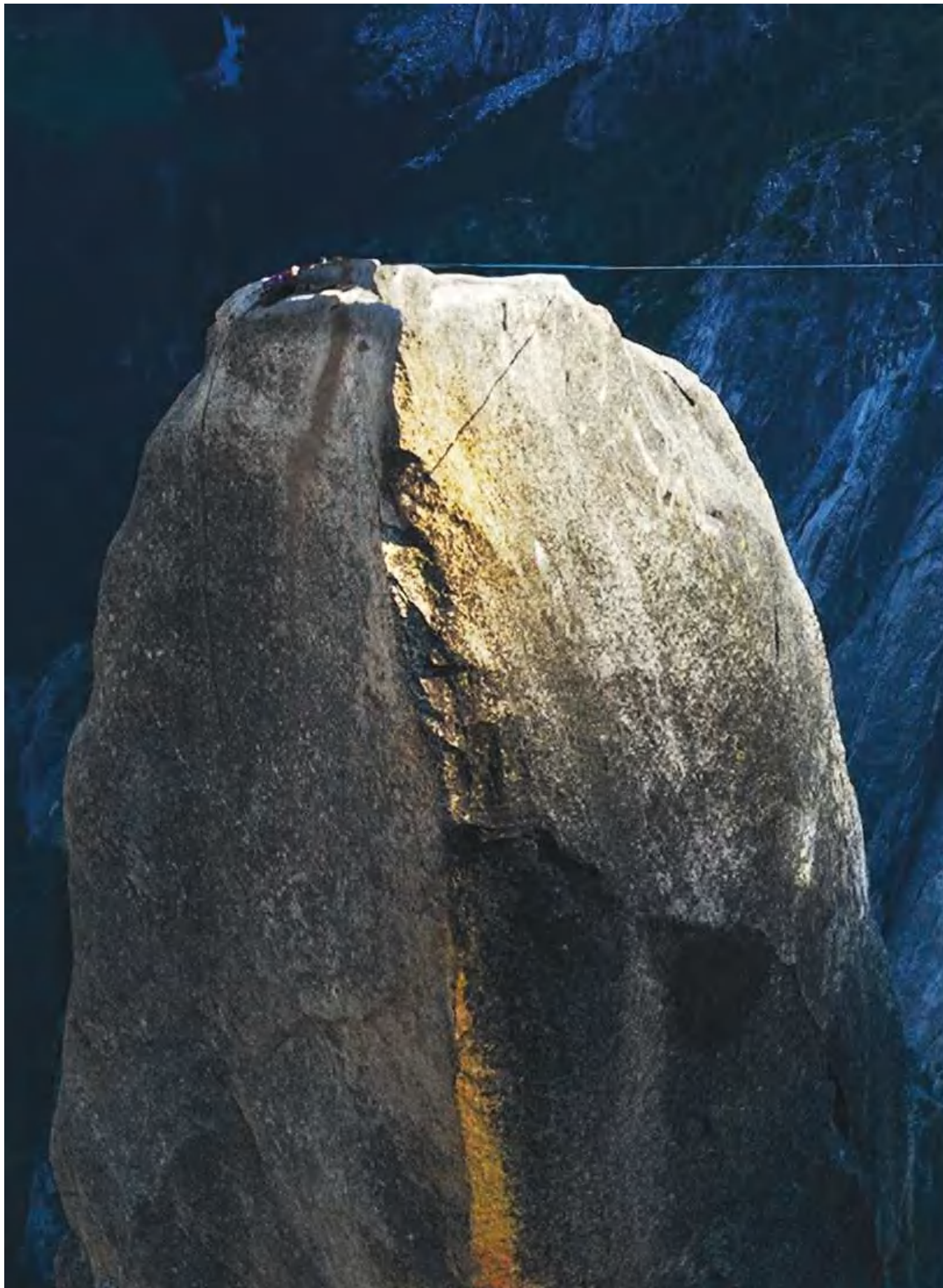
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THE GREAT OUTDOORS

Dean Potter lived his life to the max...

Picture Jim Hurst

REEL ROCK FILM FESTIVAL & DEAN POTTER TRIBUTE

A quick glance at this image is enough to prompt a serious case of vertigo, a death-defying slackline walk over a terrifying drop. But the photo is tinged with tragedy. The highwire daredevil balanced above the canyon died earlier this year in a wingsuit accident. Dean Potter was a legend in the climbing community, famous for pushing the boundaries in extreme mountain sports.

He held the solo speed record for climbing the towering walls of Half Dome and El Capitan in Yosemite National Park. He set a new world record for the longest base-jump wingsuit flight when he flew 7.5km (4.66 miles) off the Eiger. And he's credited with creating the new sport of freeBASEing - basically climbing overhanging cliffs without a rope and relying on a parachute in case he fell.

But disaster struck in May when a wingsuit flight went badly wrong and Potter crashed into a rock wall in Yosemite Valley. His flight buddy also died.

Now a short film has been issued to pay tribute to Potter's extraordinary life and achievements. *The Tribute* is part of the Reel Rock film tour, which reaches Tyneside Cinema, Newcastle on 27th December.

More info: See reelrock.co.uk



THE GREAT OUTDOORS

From a Chopper to Sir Bradley Wiggins's 2015 Hour Record bike – see great bikes at the Design Museum.



Picture Emily Maye

CYCLE REVOLUTION

This striking image of a Team Sky rider tackling treacherous conditions in the Giro d'Italia (Tour of Italy) is just one of an amazing array of exhibits in a new show of contemporary cycling at the Design Museum.

Cycle Revolution opens on 18th November and features bikes ridden by Chris Froome, Sir Bradley Wiggins, Sir Chris Hoy, Chris Boardman MBE and Eddy Merckx. It also turns the spotlight on innovative accessories, from folding helmets to reflective tweed jackets.

The exhibition explores contemporary cycling culture through four tribes; "high performers", elite riders from the world of track and road racing; "thrill seekers", on mountain bikes and BMXs; "urban riders", who exhibit metropolitan cool; and "cargo bikers", who work on two wheels.

Highlights include Sir Bradley Wiggins's 2015 Hour Record bike and 2014 World Championship Time Trial bike; a number of Team Sky's Pinarellos from the 2015 Tour de France, as well as kit and equipment from the team's 2015 Tour de France win; Sir Chris Hoy's Great Britain Cycling Team London 2012 Olympic Track bike; the Lotus Type 108 ridden by Chris Boardman at the 1992 Barcelona Olympic Games; Eddy Merckx's 1972 Hour Record bike; the earliest prototype Brompton in existence; and a 1969 Raleigh Chopper!

Cycle Revolution also investigates the future of cycling, with a model of the Kolehnia Halfbike II, a compact vehicle which the user pedals standing upright.

More info: Cycle Revolution is at the Design Museum, Shad Thames, London SE1 2YD from 18th November to 30th June 2016, designmuseum.org





Picture Andy Lloyd Photography

ALL ABOUT THE BIKE?

If you've ever wondered what difference a better bike would make to your performance, or blamed your mishaps and misfortunes on inadequate components, you've now got the chance to put your theories to the test. A new initiative at BikePark Wales, one of Britain's top trail centres, is giving mountain bikers the chance to trial top end Enve wheels and Fox forks.

Riders can pre-book demo sets of 26", 27.5" or 29" wheels, whose rims alone start at £700 per wheel, with multiple options available to try. Likewise, BikePark Wales has demo versions of Fox 34 and 36 forks in various wheel sizes and

travel options as well as Fox Float Evol, Float X and X2 rear shocks for popular bike models.

BikePark Wales has 29 trails graded green to black, and some of the most exhilarating runs in the country, with berms, tight gnarly rock sections, drop offs, and even a family-friendly loop.

More info: The demo wheelsets cost £70 for the day (try as many as you like for the same fee), which is refunded if you buy the wheels. The demo forks cost £50 for a day's hire, or £75 for front and rear suspension, again with the fees refunded if you buy the products, bikeparkwales.com/ demo-centre

Trial it and buy it,
if you want...



STARTLINE

ON YOUR MARKS FOR A BRILLIANT MONTH IN THE OUTDOORS

Stairways to summits

New analysis shows fun ways for commuters to “climb” mountains on their way to work, and compares the fitness travel plans of workers in major cities.

NO TIME, NO money, no mountain skills...? No worries! A new hashtag #UrbanMountains has calculated how Londoners can scale the equivalent of the world's highest mountains simply by avoiding the escalator and taking the stairs on their daily commute. And there's no altitude sickness, oxygen tanks or frostbite to worry about.

London's Tube platforms are dug seriously deep, giving commuters the chance to accumulate significant altitude as they travel to and from their 9 to 5s. Hampstead Station, for example, is 58.5m underground, so climbing it 151 times would be the equivalent of the height gained climbing to Mount Everest's 8,848m peak. Hiring a Sherpa to carry your briefcase might be overkill, but start on 1st January and with just one ascent per day, you could be planting an imaginary summit flag by July.

If the world's highest mountain seems an ambitious goal to start, 40 ascents of Euston Underground's 33m stairs add up to the 1,344m required to walk up Ben Nevis.

#UrbanMountains is the brainchild of outdoor retailer Snow+Rock, where head of marketing Inga Taylor said: “While Londoners don't have the luxury of mountains on our doorstep, there is a lot of opportunity to get out and take on London's #UrbanMountains if you just look at things differently. We love seeing the adventure in the everyday so next time you're riding up the escalator, consider walking and in time you could have scaled the equivalent of one of the world's peaks.”

For runners, there's a chance to up the ante by



tackling a mountain marathon in a single run, covering 42km up, down and between London Underground stations, with well over a thousand metres of ascent. The “underground” is an anytime challenge (see rorycoleman.co.uk).

SELF-POWERED COMMUTING

Meanwhile, statistics from Strava, the social network for cyclists and runners, reveal that the average cycle commute in London is 15km, less than half the average for Milan (31.9km) but ahead of New York (14.1km). Riders in pancake flat Amsterdam unsurprisingly clocked the fastest average speed per ride at an impressive 25.6km/hr, while cyclists in Barcelona face the hilliest terrain, climbing on average 771.5 metres per ride, although not all on the way to and from work.

Running commutes in the world's great cities are a remarkably similar length at between 7 and 8km, with Paris runners setting the pace at an average of 5:33/km, followed by London in second at 5:36/km and Berlin in third at 5:42/km. In all bar Sao Paolo, Tuesday is the most popular day to commute in trainers.

STAIRWAY TO SUMMITS

Tube station	Equivalent number of times walking stairs/escalator	Mountain	Summit height
Hampstead	151 times	Everest	8,848m
Covent Garden	166 times	Mt Denali (McKinley)	6,168m
Highgate	157 times	Kilimanjaro	5,895m
Angel	133 times	Mont Blanc	4,810m
Belsize Park	126 times	Matterhorn	4,478m
Russel Square	112 times	Eiger	3,970m
Euston	40 times	Ben Nevis	1,344m
Holborn	34 times	Snowdon	1,085m
Goodge Street	33 times	Scafell Pike	978m



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NEW
PRODUCTS
Festive fitness gifts



18
SPORTS
SCIENCE
Water music



23
DIY
NUTRITION
Sports drink



CYCLE COMMUTING

City	Average Distance	Favourite Day
London	15km	Tuesday
Milan	31.9km	Thursday
Berlin	16.6km	Wednesday
Paris	16.8km	Wednesday
Barcelona	27.4km	Thursday
Amsterdam	26.5km	Wednesday
San Francisco	15.8km	Tuesday
Sao Paulo	17.4km	Tuesday
Sydney	17.7km	Tuesday
New York	14.1km	Wednesday
Los Angeles	19.6km	Tuesday
Melbourne	17.6km	Tuesday

Source: Strava

RUNNING COMMUTING

City	Average Distance	Favourite Day
London	7.2km	Tuesday
Milan	7.8km	Tuesday
Berlin	8.5km	Tuesday
Paris	8.6km	Tuesday
Barcelona	7.8km	Tuesday
Amsterdam	8.0km	Tuesday
San Francisco	7.0km	Tuesday
Sao Paulo	7.2km	Wednesday
Sydney	7.3km	Tuesday
New York	7.1km	Tuesday
Los Angeles	7.2km	Tuesday
Melbourne	7.2km	Tuesday

Source: Strava



Dear Father Christmas...

Whether you're searching for a gift for the outdoor fitness fan in your life, or hinting for yourself, here's a smart selection of present ideas that won't break the bank.

1 Aclima WarmWool Pulse Heaters, £23.95

nordicoutdoor.co.uk

Keep your hands warm and maintain dexterity in your fingers with these merino wool guards. By insulating your wrists, where veins are close to the surface of your skin and your palms, they'll help to maintain circulation to your fingertips. And when Jack Frost really nips, combine them with gloves for even greater warmth.

2 TOAD Diary, £9.95

toaddiaries.co.uk

Track your training throughout 2016 with a personalised diary. Online ordering lets you choose the cover, personalise its title, and select the start date and duration. Every day's entry includes a log to track your progress and plan your training schedule.

3 Henty Wingman, £119

henty.cc

Two bags in one, the Wingman is ideal for commuters with a pre- or post-work fitness programme. The outside bag swallows a business suit and shirt, and rolls around an inner tube bag to avoid creases in your clothes. The inner bag is designed to swallow exercise clobber, such as running kit, trainers and a towel. The whole thing rolls up neatly to carry on your back, and there's even a pocket for a laptop.

4 Hydro Flask, £24

hydroflask.com

When you find a good flask you stick with it and this new Hydro Flask shows every sign of being a keeper. In a brief test, ice cubes were still frozen 24 hours after being dropped in and liquids don't pick up any flavour from the stainless steel walls. Double wall insulation should keep hot drinks piping for up to six hours, while the powder coating helps grip when your hands are wet or sweaty.

5 Fenwick's Chain Cleaning Sponge, £1.79

fenwicks.info

Bathtime sweet and smellies are staple Christmas gifts, but here's a sponge for the shed or garage. A

V-groove cut into the sponge makes it easy to run a chain through, applying pressure to all sides of the links. Simple, cheap and effective, it's the perfect stocking filler (pair it with Fenwick's Foaming Chain Cleaner for a great gift combo).

6 Jottnar Vidar, £20

jottnar.com

There's always space for a new beanie in any outdoor lover's wardrobe, and this fine-looking one is just the ticket. It's a wool-acrylic blend with a soft, fleece lining, it's designed to fit under a helmet, and it comes in six colours in case you want to accessorise with your winter jacket.

7 LOWEPRO Viewpoint CS 40, £22

lowepro.co.uk

If Santa was generous enough to bring you an action camera, you'll need somewhere to store it safely on your adventures. This soft-sided, padded case will swallow and separate your GoPro, microSD cards, mini-tripods and mounts.

8 Snugs Waterproof Earphones, £159

snugsearphones.co.uk

These custom-fit earphones let you take your motivational music wherever you train, from the pool to a kayak to a windsurf board. You'll need to have a professional mould made of your inner ear (an extra £40 for your first pair of headphones), which ensures a watertight fit that also isolates external sounds. The 'phones work with any MP3 player or smartphone, but remember you'll need to make sure that's waterproof too.

9 Sigma Brakelight, £7.99

todayscyclist.co.uk

This ingenious little red LED would be the perfect gift for your cycling club mates. It weighs just 6gs and attaches to your rear brake cable. When you pull on the brake lever, the light comes on, warning cyclists behind that you are slowing down. It helps to reduce the risk of rear end shunts on club night rides.



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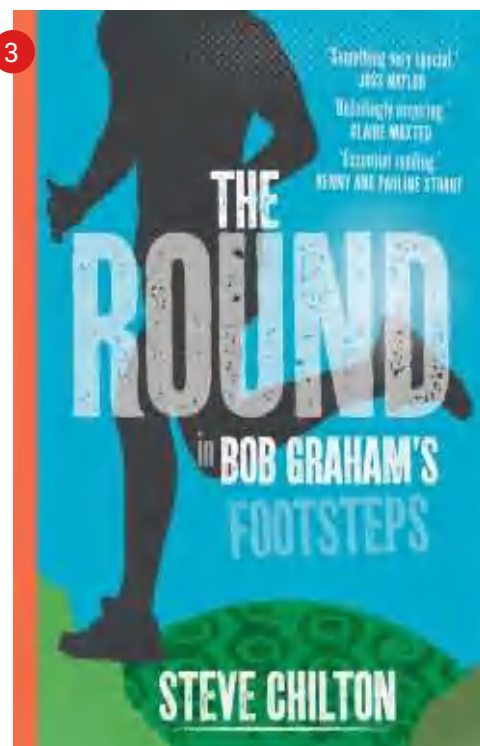
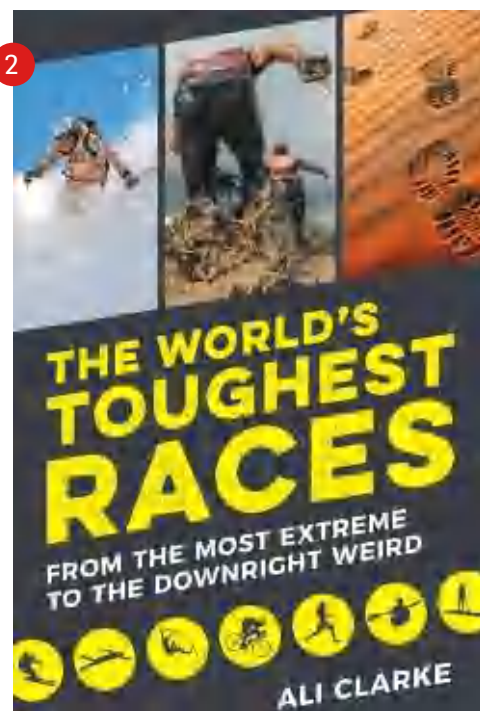
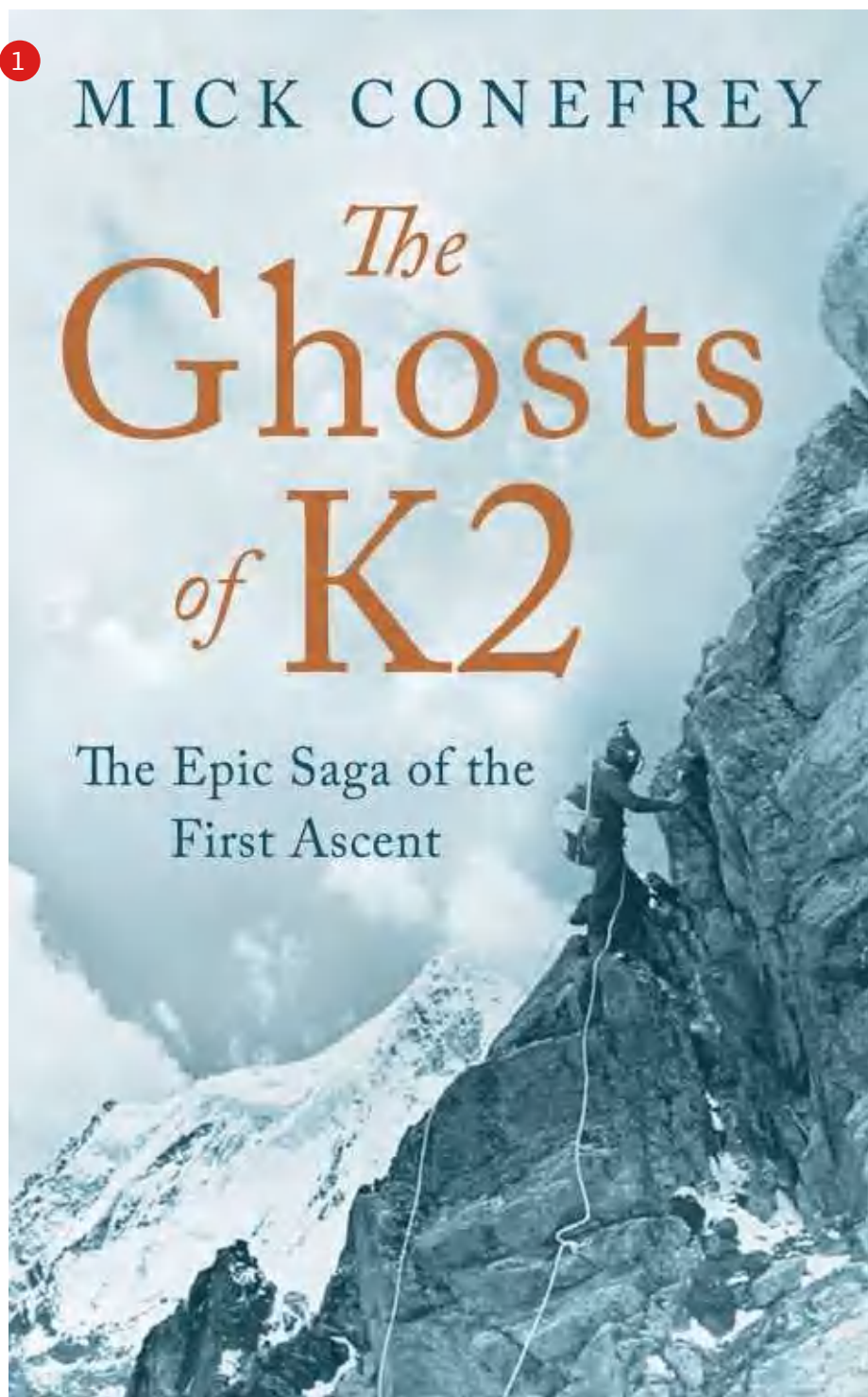


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Christmas reads

1 The Ghosts of K2, by Mick Conefrey, £20 oneworldpublications.com

Everest may be the highest, but summiting K2 is the pinnacle of the mountaineering world. This Himalayan peak is extreme in every respect – in its altitude, its weather and the difficulty of climbing almost five vertical miles of rock and ice. Good climbing stories have a *Boy's Own* thrill that is utterly engrossing, and this compelling book captures the drive, desperation and drama of the first generation of mountaineers determined to scale K2.

2 The World's Toughest Races, by Ali Clarke, £8.99 summersdale.com

Excite yourself, scare yourself, drool or quake as you read profiles of 54 insane sporting challenges, ranging from the Antarctic Ice Marathon to swimming the Channel, running a desert ultra, riding across America and even racing up the Empire State Building. The events are brutal, yet their appeal strangely intoxicating.

3 The Round by Steve Chilton, £17.99 sandstonepress.com

The round in question is Bob Graham's infamous run through the Lake District taking in 42 peaks over 62 miles, with 27,000 feet of ascent. Oh yes, and you've got 24 hours to complete it. This formidable challenge dates from 1932 and enjoys cult status among fell and ultra runners. The Round traces its history, catches up with the uber-fit few who have completed it, and converts the insanity of the ordeal into a tempting, inspiring "what if..." Or maybe not!

► RC HEAD TO TOE



RACING THOROUGH- BREDS

NO SHORTCUTS

SCOTT Racing concept is about more than developing products for contenders, it's about developing products for champions. Designed for passionate cyclists looking for speed, aerodynamics and light weight, our RC products are here to help you reach your best. With the RC Road shoes, RC bikewear and Vanish 2 helmet, you'll be equipped from head to toe with our top of the line, second shaving technology fit for the top step.



Charting success

New research reveals the vital emotional impact of song lyrics to boost training.

ATHLETES SEEKING MOTIVATION from music as they train need an emotional connection to the lyrics, researchers have found.

High tempo songs have long been used to raise the pace and intensity of training sessions, but this new study has discovered that "cheesy" songs like *Eye of the Tiger* may have no impact because they struck no chord with the athlete.

Inspirational lyrics, however, delivered a performance gain in excess of 10%, say the experts at Gloucestershire's Hartpury University Centre, a leading land-based and sports educational establishment.

They tracked the progress of British swimmer Ben Hooper over 13 weeks and 25,000 lengths of the pool as he prepared for an epic 2,000-mile Atlantic swim this December from Dakar in Senegal, West Africa, to Natal in Brazil.

Lead researcher Richard Collins, a sports psychologist and a senior lecturer at Hartpury University Centre explained lyrics with an "emotional resonance" were more important to Hooper than both tempo and rhythm combined.

"The music still needs to be at a brisk pace but we found that tracks with an emotional resonance can boost performance and endurance as much as 10%," said Collins.

"This could be because these emotionally-tied songs help Ben muscle down and push through the pain and monotony of swimming so many lengths during such an ultra-endurance event.

Artists like Eminem and The Script, for example, inspired confidence and determination due to their general themes of triumphing against the odds, with lyrics like:



"You can go the distance. You can run the mile. You can walk straight through hell with a smile."

Other songs made Ben, "think of his daughter and reminded him why he's doing this historic challenge, to show that ordinary people can achieve the extraordinary," added Collins.

Ben spends eight hours a day training for his epic swim, and cut the average time of a 12km swim, 480 lengths of a 25m pool, from four hours to three hours 37 minutes - a reduction in time of 10% when he listened to uplifting music on his waterproof MP3 player, a reduction of 12 seconds every 100m.

"This research has identified the optimum songs to get my mind in the right place and push me through when things get tough," said Hooper. "Their insights into the emotional impact of music has been a real eye-opener and will prove of great benefit to me as I'm battling the elements and needing every ounce of motivation I can muster to keep on going."

The study also revealed songs for Hooper to avoid, such as Bob Marley's *Three Little Birds*, Morcheeba's *World Looking In*, and Massive Attack's *Tear Drop*, which include positively emotive lyrics, but whose downbeat tempo slowed Hooper's lap times.

■ Follow Ben Hooper's progress and support his fund-raising goals at bensmiles.co.uk

SOUNDTRACK OF SUCCESS

STRONG SONGS

- 1 **Lose Yourself** Eminem
- 2 **Not Afraid** Eminem
- 3 **Don't You Worry Child** Swedish House Mafia
- 4 **Hall of Fame** The Script
- 5 **Remember the Name** Fort Minor
- 6 **Stay** Sash
- 7 **We Come 1** Faithless
- 8 **The Day Is My Enemy** The Prodigy
- 9 **Without Me** Eminem
- 10 **Back in the U.K.** Scooter



MISSING A BEAT

SONGS TO AVOID

- 1 **Three Little Birds** Bob Marley
- 2 **World Looking In** Morcheeba
- 3 **Tear Drop** Massive Attack
- 4 **Don't Worry Be Happy** Bobby McFerrin
- 5 **Kelly Watch The Stars** Air
- 6 **One Love/People Get Ready** Bob Marley
- 7 **Fleetwood Mac** Passenger
- 8 **No Woman No Cry** Bob Marley
- 9 **You Can Get It If You Really Want** Jimmy Cliff
- 10 **I Don't Want to Miss a Thing** Aerosmith

5 things we learnt from Huw Jack Brassington, Special Forces: Ultimate Hell Week

The engineering lecturer was one of only three contestants to complete the full week of challenges.

BBC SPECIAL FORCES: Ultimate Hell Week gave 29 fit individuals, with no military experience, a bitter taste of the training regimes faced by the world's elite soldiers. The torment was unrelenting and the challenges gruelling as the contestants coped with meagre rations, sleep deprivation, constant uncertainty and some of the toughest physical and mental ordeals imaginable. Huw Jack Brassington, from Snowdonia, won eight of the individual trials.

1 Up until my early twenties rugby was everything. I played scrum-half and still would be now if I hadn't injured my knee. Fell running and triathlons then came to the rescue, scratching that itch and keeping me sane. I had success locally and internationally, competing for the British Age group triathlon team in Beijing and Auckland. I also love mountaineering - climbing Mt Blanc being one of my highest achievements - and am currently in the middle of my Winter Mountain Leader Award up in Scotland.

2 Our bodies are the most precious things we have and I'm determined to fully utilise mine in every way possible. When I'm 90 years old I want to be sitting in peace with a good book and a big glass of single malt, without being haunted by nagging questions and "what ifs?" I want to find out what I'm capable of and this (*Ultimate Hell Week*) was a rare opportunity to do just that.

3 My usual training regime includes between 10-15 hours of exercise a week, fitted in around my full-time job. This would include: cycling to work, jogging on my lunch break, swimming whenever I pass a pool and as many fell races/triathlons as I can. The only thing I changed for *Ultimate Hell Week* was that I went back to the gym four to five times a week, for 20-25 minutes of a non-stop circuit of bodyweight orientated exercises, full of

intensity concentrating on body form and power of movement.

4 The Australian SAS box carry was the toughest challenge. Between four of us we had to carry a 100kg box on top of our 20kg bergens, up a steep 1,000ft hill. Similar challenges continued for the next 36 hours with no food, two hours' sleep and plenty of smoke grenades chucked in for good measure. I came closest to giving up right at the start. I'm a fat guy deep down; I love food and lots of it. We were two days in and the rations were small and way too healthy for my liking. There's only so much lentil salad and chicken breast I can take! Eventually they heeded my complaints and gave me chips... so I stayed in the competition.

5 The Australian and British SAS were the toughest training regimes for me. I understand physical exercise: run-sweat-pain-ouch-finish-steak-pint-job done. But they wanted so much more. There was no steak, no pint, no rest; it was completely unrelenting. I came away with massive respect for the people who do this for real. As much as I appreciated the experience and am proud to come out the other end, I'm quite happy being a weekend warrior for now.

■ **Look out for a future story on Jack as he travels the world completing adventure and OCR races.**



Outdoor Fitness

OUTDOORFITNESSMAG.CO.UK
OUTDOOR FITNESS Kelsey Media, Cudham,
Tithe Barn, Berrys Hill, Cudham, Kent TN16 3AG

EDITORIAL

EDITOR John Shepherd of.ed@kelsey.co.uk
CONTRIBUTING EDITOR Jonathan Manning
CONTRIBUTORS Mark Bailey, Ian Corless, Laurence Crossman-Emms, Nicola Davies, Margaux Doey, Damian Hall, Andrew Hamilton, Cath Harris, Jim Hurst, Henry Iddon, Rob Kemp, Guy Kesteven, Patrick Kinsella, Paul Larkins, Andy Lloyd Photography, Emily Maye, Sean McFarlane, Renee McGregor, Jon Sparkes, Threshold Sports, Jacob Tipper.

DIGITAL EDITOR

Andrew Cumner-Price
andrew.cumner-price@kelsey.co.uk

ADVERTISEMENT SALES

GROUP ADVERTISING MANAGER

Jason Baker, 07710 096548

KEY ACCOUNT MANAGER

Chris Cope, 01733 306202/07496 270322

SALES EXECUTIVE

Irena Cornwell, 01780 749502

PRODUCTION

PRODUCTION DEPUTY MANAGER

Sarah Willmott, 01733 353376,
sarah.willmott@kelsey.co.uk

PRODUCTION MANAGER

Jackie Aubrey

MANAGEMENT

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Summit for the weekend

MALVERN HILLS

Could anywhere be more fitting for outdoor challenges than the Land of Hope and Glory?

Why: True, the Malvern Hills aren't a single summit, but this narrow north-south ridge links a series of mini-peaks, including Worcestershire Beacon, Herefordshire Beacon, and the aptly named Perseverance Hill. The flanks are so steep that magnificent views spill for miles into Wales to the west and England to the East. Malvern itself was home to the composer Edward Elgar, whose *Pomp and Circumstance* provides the rousing music behind *Land of Hope and Glory* (the lyrics were written by AC Benson). Paths and bridleways criss-cross the Malverns for walkers, trail runners and mountain bikers, while road cyclists can feel the burn on roads that go up and over the hills.

Run here: If ever there were a destination to run for the sheer joy of it, it's these hills. A sharp climb leads to the skyline ridge, where excellent paths mean you can lift your eyes from the trail and savour the spellbinding views. If you do feel the need for competition, the seven-mile Beacon Race every October is a testing event with long, steep climbs and some fast descents (worcester-ac.co.uk). And if the landscape just leaves you wanting to run and run, the Malvern Hills Ultra next May offers distances of 8, 27, 34, 44, 52 and 104 miles. The 52-mile race has over 6,000 feet of ascent (ultrarunningltd.co.uk).

Mountain bike here: Wide trails and closely-packed contour lines make the Malvern Hills a great place for cross-country riding, and the high level bridleways mean bikers can ride unimpeded. Be aware, however, that the high

speed and alleged lack of control of some bikers has alarmed walkers and horse riders, leading to a dedicated management plan to promote responsible biking.

Road cycle here: While Tarmac is thankfully absent from the highest hilltops, the roads across this undulating area will still force riders out of the saddle, especially to the west of the Malvern ridge. A number of sportive rides visit the area for the views and the climbs, including the brilliantly named Land of Hops and Glory, which starts and finishes at the Wyre Valley Brewery. Next year's event takes place on 10th April (wyrevalleybrewery.co.uk/sportive). Later in the year the Malvern Mad-Hatter loops around Worcestershire, Herefordshire, and Gloucestershire, never losing sight of the Malvern ridgeline (ukcyclingevents.co.uk). And in September the Elgar Vintage Ride crosses the hills, with riders in old fashioned gear on vintage bikes (elgarvintageride.co.uk).

Maps: Ordnance Survey Landranger 150 and Explorer 190 cover the area.

Plan your visit: The cheapest sleeps are to be found just to the south of the Malvern Hills, where Berrow House Bunkhouse offers beds from £13 per night and camping from £6pppn (berrowhouse.co.uk). In Malvern itself, Puddle Lane B&B tops the Tripadvisor ratings with five stars and double rooms for £70 per night. Quench your thirst in the Nags Head on Bank Street in Malvern (nagsheadmalvern.co.uk) or the Chase Inn Upper Colwall (thechaseinnmalvern.co.uk).

The flanks are so steep that magnificent views spill for miles into Wales to the west and England to the East.

Shutterstock

Have you ever dreamt of crossing the country by bike?

The Deloitte Ride Across Britain is the UK's largest, most iconic Land's End to John O'Groats bike ride and we are giving away a place on next year's ride which takes place from 10-18th September 2016.



We are looking for an *Outdoor Fitness* reader – regardless of their cycling ability or fitness – to document and capture their ride in words, photographs and video footage to show what it really takes to ride more than 960 miles in nine days.

You will join cyclists from all over the world to travel through some of the country's most beautiful landscapes, climbing a total of 15,000 metres – or nearly twice the height of Everest.

It's an undoubtedly tough challenge but the overwhelming majority of riders rate the Deloitte Ride Across Britain as one of the best experiences of their life.

We'll be there to help you all the way.

You will be given training plans and advice and you can take part in training days before the ride to make sure you're fully prepared.

During the ride, you will stay overnight in base camps where you will enjoy a delicious supper, a good night's sleep in your own tent, and a hearty breakfast before setting off the next day.

Pit stops give you the chance for a welcome break and chaperones ensure everyone is cycling safely and within the law. There is medical and mechanical support on hand as well as massage therapists and physiotherapists. And although the ride is not a race, it is timed and tracked so that your friends and family can see your progress.

Will you fundraise for the ride? Will you dedicate your ride to someone special? Or will you be doing it to get healthier or to lose weight? Are you in a wheelchair? Will you be riding on a tandem? Will you ride with your husband or wife or your son or daughter?

Whatever your reason, if you would like to take part in the Deloitte Ride Across Britain and document your experience for us, then please submit a short description of up to 500 words telling us why you have what it takes to, info@rideacrossbritain.com

For more information about the Deloitte Ride Across Britain, rideacrossbritain.com





DIY Energy Drink

In this new series endurance nutrition expert Renee McGregor provides easy to prepare performance boosting food and drink recipes and tips. (Food and drink that you can prepare yourself... and yes, very easily!)

THERE ARE SO many products on the market designed to improve your performance during training or competition, but it's straightforward to prepare your very own. And the benefits are that you can tailor them to your personal taste preferences and save some money in the process.

DIY ENERGY DRINK

The main components of any energy drink are designed to supplement glycogen stores and to replace lost salts so that consistent performance results.

It's well documented that when glycogen stores are full, there is sufficient energy to fuel moderate exercise for 90-120 minutes and maximal exercise for 30-60 minutes. So the faster/harder you are working, the quicker your glycogen stores will become depleted. In order to prevent the inevitable "hitting the wall" it's beneficial to top up carbohydrate so that your glycogen stores are spared for longer.

For training/competitions lasting up to 2 hours, the recommendation is to consume around 30-60g an hour of carbohydrate depending on the intensity you are training at, beyond this you may benefit from 60-90g.

GET 30G OF CARBOHYDRATE WITH THIS SIMPLE TO MAKE CARB DRINK.

- Take 300ml of juice – this can be from concentrate. Choose a flavour you prefer.
- Dilute with 200ml water; this will ensure that the carbohydrate concentration is around 6%. Most standard shop bought energy drinks contains 5-7%. This concentration range seems to be optimal for absorption by the body. If drinks are hypertonic i.e. have carbohydrate concentrations of more than 7%, they can potentially cause stomach distress, especially in warm conditions.
- Adding a quarter teaspoon of table salt to your drink will provide 25mmol of

sodium per 500ml. This is because an endurance drink should replace salt loss. If these are high and not replaced, dehydration can result. By adding salt to your drink, you can aid the absorption of fluid into the body. Most standard sports drinks contain around 10mmol of sodium per 500ml; the recommendations are 20-30mmol per hour and double this for ultra distance events. Our DIY sports drink – as noted – provides 25mmol.

It's as simple of that! No need for artificial sweeteners or flavours, just diluted juice with some salt added. Additionally if you use orange juice, you'll also reap the benefits of Vitamin C which has been shown to aid with preventing fatigue.



RENNE MCGREGOR
Is a registered dietician and sports nutritionist and ultrarunner, eatwellfelfab.

Events Diary: Dec-Jan

There's something for everyone in our events guide...



29TH NOVEMBER

WELSH GRAVITY ENDURO SERIES ROUND 4

Coed-y-Brenin Forest, N Wales

Get your fix of downhill and cross-country MTBing. There are 5 timed stages and you can practice on the Saturday, before Sunday's race.

£46.50, Welshgravityenduro.com

29TH NOVEMBER

SNOWBALL SPINNER CYCLE

Warwick Racecourse, Warwick

There are two routes to choose from, the 65-mile epic and the 47-mile standard. You can enter on the day – as long as the event has not been sold out.

£33, ukcyclingevents.co.uk

29TH NOVEMBER

WINTER DUATHLON (SHORT)

Bowhill Estate (near Selkirk), Scotland

Take part in a low-key, back to basics duathlon in the Scottish borders. The course length is described in terms of expected time taken

£18, durtyevents.com

5TH DECEMBER

ICEMAN RUN 11KM OR 16KM

Army Training Ground, Frimley, Surrey

The second race in the Human Race Off-Road Series. Frimley is the perfect place for getting off the Tarmac and into the great unknown, especially if you like mud, dirt and hills! Duathlon also available.

£29, humanrace.co.uk

5TH DECEMBER

COSTAL SERIES DORSET ULTRA

Lulworth Cove., Dorset

Run 33 miles over the Jurassic Coast Path – the only location on the planet where in a couple of hours of trail running you will travel through a few million miles of time.

£60, endurancelife.com

6TH DECEMBER

FONTWELL FREEZE (ROAD CYCLE)

Fontwell Racecourse, west Sussex

Follow the quietist and best winter roads in Sussex starting from Fontwell Racecourse. Choose from 3 distances; the Epic 64-miler, the Standard 33-miler and the

Short 33-miler.

£33, £33 £23, ukcyclingevents.co.uk

13TH DECEMBER

MAD DASH IN THE PARK Ebworth Park, Saltridge hill, Gloucestershire

Ride 4.5km "all-weather" laps through the Cotswold Hills with a race duration of approximately 90minutes. The race is part of a series designed to suit all ages and abilities.

£15, Madevents.wordpress.com

13TH DECEMBER

OPEN 5 SERIES MTB, RUN, NAVIGATION AND ADVENTURE RACE Clwydian Range, North Wales

You have 5 hours to visit as many points (controls) as you can. Some can only be collected by MTB other by foot – if you get it wrong you're penalised!

£35, openadventure.com

16TH JANUARY

COSTAL SERIES DOVER ULTRA

There'll be trail runners over the White Cliffs of Dover. And you'll be running 34.5 miles, much near the cliff-edge.

£60, endurancelife.com



STAR EVENTS NEAR & FAR

Sign-up or go to these great events

>>NEAR HORIZON

17TH JANUARY 2016 LIVERPOOL WINTER RUN

Liverpool

Revel in the closed roads of this 10km run as you kick-start your New Year fitness regime with a race past Liverpool's landmarks, through a giant "snow zone", and finish with a "polar bear hug" at the end. The event is a fundraiser for Cancer Research UK.

£32, winterrunseries.co.uk

>>DISTANT HORIZON

7TH MAY 2016 PRESELI BEAST

Maenclochog, Pembrokeshire

Race off-road through the spectacular Preseli Hills on this trail run that takes in steep-sided wooded valleys, spellbinding views over Newport Bay and a fabulously rugged landscape. Choose from 11, 24 or 32 hilly miles – even the middle distance Preseli Beast includes 4,700 feet of ascent. There are category prizes, spot prizes and a decent goody bag.

From £10, preselibeast.wordpress.com

>>LIFELIST HORIZON

8TH MAY 2016 FRED WHITTON CHALLENGE

Grasmere, Cumbria

It seems counter-intuitive, but the harder the challenge the more popular the event, and nowhere more so than this gruelling road cycle ride through the Lake District. On its 112-mile circuit, which includes the six major climbs of Kirkstone, Honister, Newlands, Whinlatter, Hardknott & Wrynose passes, the Fred Whitton accumulates 3,950m of ascent. It can be stunningly beautiful and fearsomely difficult at the same time. Entries to the ballot (it's normally oversubscribed) open in January.

fredwhittonchallenge.co.uk

20TH FEBRUARY 2016

THE MOONLIGHT CHALLENGE

IF YOU FANCY an athletic challenge with a bit of a twist, you should consider the next event in the Challenge Hub diary - the Moonlight Challenge.

The Moonlight Challenge involves athletes running under the moonlight in the beautiful countryside of East Kent. The February race can be prone to

winter weather conditions, which nearly all competitors say, "adds to the experience".

The 33.1-mile course from Brook Farm, Reculver, near Canterbury involves a safe 6.62-mile lap, which allows competitors the option of dropping out whenever they wish. You'll run over concrete roads and reasonable farm tracks

and some more limited difficult terrain, for example, 300m of rutted unmade track.

The route is fully signed and marshalled with first aid and water stations provided. Even though your route is sign-posted by glow sticks, you'll need a hand/head torch. You'll also need to bring plenty of layers for your

nocturnal winter's night of running and dry and warm clothes for when you finish. And with a 5pm start and 1.00am cut-off, you should be back in bed and (hopefully) ready for the next day and a daylight recovery session.

More info, challengehub.co.uk/about-challenges/about-moonlight-challenge





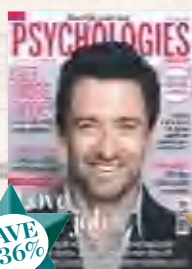


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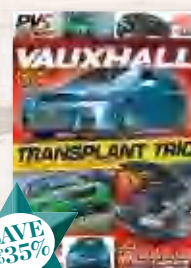
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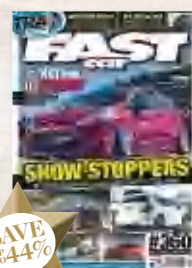
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ADVENTUROUS

A person wearing an orange jacket and dark pants is captured mid-jump, falling off a rocky cliff edge. Their arms are outstretched horizontally, and their legs are bent in a jumping motion. The background is a vast, rugged mountain landscape with steep, rocky slopes and a winding river or path visible in the distance. The sky is overcast and grey. The word "ADVENTUROUS" is overlaid in large, white, bold, sans-serif capital letters across the middle of the image.



SPIRIT



SELF-CONFESSED “LAZY” ADVENTURER ALASTAIR HUMPHREYS TALKS ABOUT BOREDOM, ARGUING OVER SPOONFULS OF JAM AND WHY HE’S THE OPPOSITE TO SIR RANULPH FIENNES

Words Damian Hall **Pictures** Dennis Danfung, Wrangler

P

rofessional adventurer Alastair Humphreys has spent four years cycling around the world, walked 1,000 miles across the Empty Quarter desert, 600 miles across India, rowed the Atlantic and completed the Marathon des Sables (breaking a foot). He was named as one of *National Geographic* Adventurers of the Year 2012 for his

microadventures concept, promoting accessible adventures, such as wild camping and walking around the M25. He’s also a motivational speaker and author of adventure and children’s books.

Damian Hall: Hello Alastair. What’s your definition of adventure?

Alastair Humphreys: It’s such a broad word. You have Ranulph Fiennes on one side doing these really extreme things, all the way to Bill Bryson’s *A Walk In The Wood* – two middle-aged guys strolling through the woods for a while. Adventure fits in that whole realm and I enjoy bouncing backwards and forwards along that line. Adventure for me is doing activities and challenges that are new, stuff that’s difficult, that I get curious about. I get very bored when I’m familiar with things. I find routine and normal life boring. I’m very excited about being a beginner, so doing stuff I’m rubbish at, and having to learn excites me a lot more than trying to get the last one percent out of something I already do.

DH: Can you recall your first adventure?

AH: The pivotal time in my life was when I finished A-levels. Instead of going to university, I went to South Africa for a year and taught English in a little village school. That really opened my eyes to the world and made me want to go and see lots of different places, places very different to those I’d grown up in. When I got home I went to university and joined the Territorial Army. That got me excited about physical challenges. I was always quite rubbish at team sports, but I learnt that up in the hills anyone can push themselves hard and be measured against the wildness. In the TA one time the Regimental

Sergeant Major came to chat to us. He was ex-Special Forces and he terrified me, but I had huge respect for him. He asked us all about our plans after uni and everyone else spoke of joining the Army or jobs in the City. I had no idea what to say. But my mouth opened and said, "I'm going to be an adventurer." My pals burst out laughing. But the RSM said: "That's the best f*ckin' answer I've heard all day". When you're saying things out loud, articulating them, things start to become real. I had restless angst and general laziness and I didn't want to get a proper job like everyone else.

DH: You cycled round the world for four years. What did you learn from the trip?

AH: It changed my focus in life. It made me massively more self-confident and more ambitious to make the most of my opportunities and potential, and made me less scared of taking on new difficult things. It also made me realise how friendly and safe the world is. It wasn't a daunting, dangerous experience. It was a positive, happy, giant world-community experience. Of course I felt out of my depth and in danger at times, but if you spent four years cycling around London you would have some frightening experiences. But an adventure almost needs that sort of thing, whether you're scared or exhausted, the struggle side of things is really important. But most days were just happy and fun, if a little bit tiring, because I had to cycle 46,000 miles.

DH: Have you ever had what some people tend to call a "proper" job?

AH: I was a teacher for a year. I did the Marathon des Sables and came back on crutches, with a broken foot. I thought the kids would think I was amazingly heroic, but they all thought I was an idiot. I really enjoyed teaching, but I felt it was a career I could do perhaps later in life. I hadn't explored the adventure side of things enough yet. I was writing magazine stories, doing talks, planning my next expedition. I had some sort of momentum. So I decided to commit, to turn adventure from being my hobby and passion, into being my job.

DH: After quitting teaching you walked 600 miles across India...

AH: One thing that never seems to go away is that walking a long way with a big pack on really, really hurts. That was in my more masochistic era of life. I wanted to prove things to myself. I spent five years trying to plan a South Pole expedition, chasing £1 million of sponsorship through the financial crisis. I had to withdraw from the trip, for boring family reasons, and went back to doing stuff off my own back. If I do it all myself, I'm the master of my fate. So I walked across the Empty Quarter desert with a friend, pulling a home-made cart with 300kgs of food and water.

DH: Next you rowed across the Atlantic Ocean for 45 days. It must have become monotonous...

AH: There were four of us and we rowed in twos: two hours on, two hours off, two hours on, two hours off. Twenty-four hours a day, seven days a week. You do 12 hours of rowing each day and never have more than 90 minutes of sleep. The routine is brutal and grinding. On the one hand it's massively boring. But you start to really observe details in the sea, how it looks in different weathers or different times of day. Things like seeing fish are real moments of excitement. And you spend a lot of time nattering. It felt like a lot more of a human expedition.

DH: It must have been easy to get on each others' nerves?

AH: Inevitably, if you spend a lot of time with anyone and you haven't had enough sleep, you start being a little bit tetchy, saying things in the heat of the moment. You have huge arguments about who's had the biggest spoonful of jam, but that's about the limit of it. The knowledge that your life depends on them and vice versa helps you be calm and rational. You are hungry and scared and bored and homesick, therefore the others are likely to be too. Empathy and kindness are more important in an expedition partner than being able to tie a bowline [knot] in the dark and being really tough. Those sorts of things you can learn.

DH: Why do you think some people are not drawn to adventure?

AH: The sheer numbers who go and see, say, the Grand Canyon, suggests people do have a connection with wilderness and nature. And the sheer number of people who do things like the Great North Run

suggests there's an appetite for physical challenges too. Adventure is the perfect combination of the two. I think people think it's too difficult; it's for elite athletes or rich, middle-class men. I've been trying to make adventure more accessible, to make people realise they don't need to be an expert or own a £500 Gore-Tex jacket to climb up a hill. Once they do it once, the next time is so much easier. A lot of people have never had the opportunity to try it.

DH: David Hempleman-Adams says the best bit of an adventure is the planning stage. What's your favourite part?

AH: I entirely agree with him. I love planning trips, tootling about on the internet looking for ideas, buying maps and sticking them up on walls, meeting your friends and getting excited about the trip. I love all that. The day dawns and if it's a good adventure it's going to be difficult, so it's a bit scary and daunting, and the actual trip itself is usually quite miserable. The moment I get to the end of the journey I almost always feel a lot of anticlimax. I've done it. The appeal is trying to do things I might not be able to do. So once I've done it, it loses a lot of interest for me. You get the blues and you fix that by coming up with a new plan. And so it continues...

DH: How do you make a living from being an adventurer?

AH: I do it by living incredibly cheaply. I started doing talks at schools, which led to corporate talks, which has led to income. And huge amounts of self-promotion, which is quite distasteful to some and isn't something I particularly love. But the only way to earn money is if people know about you. So you try to build your brand which is a horrible phrase and that comes about by doing interesting stuff, sharing it in an interesting way and repeating that for several years and hopefully at some point you'll earn enough for it to be sustainable. I make my money primarily from speaking about adventures. I've written nine books, but I'm a long, long way from making a living from them. What I do is so much easier than 99.99 percent of people in Britain are doing all the time. There's definitely a large bit of laziness in there.

DH: What sort of responses do you get when you tell people you're an adventurer?

AH: Very different responses. I try not to talk about it initially with new people, but if it does come up a lot of people are sort of envious they say, "Wow, that's amazing." The responses that annoy me though are: "Oh you must be really rich to be able to do that." Or, "You're really lucky to do that". Or, "I can't do that". It's the decisions I've made and worked towards that have made it happen for me. Sometimes I get: "When are you going to get a proper job and start paying your taxes" and that really annoys me, because I work hard and I pay my taxes. But I also feel very happy that what I'm doing is something I really love. Most people wouldn't want to be an adventurer. But I think it's really important that people try and find something that they enjoy doing. I feel lucky that I get up in the morning and I love going to work, wherever that might be that day.

DH: Do you think too many people are frightened to fail?

AH: I ummed and ahed about cycling around the world for a long time. Eventually what I realised was that I wasn't scared about cycling thousands of miles, or crossing Africa, I was scared of failing... coming home and people saying "Ha ha, you failed". But what I know now is that a lot of those people who might tease or mock me are slightly jealous and would love to be doing their own thing as well. But it's better to try it and fail than to not try it at all. I do talks to high-end businessmen, people who on the surface are far more powerful, rich and successful than I will ever be. But when we get talking, they're usually quite jealous of me living in a tent and eating banana sandwiches.

DH: Is fellow adventurer Sir Ranulph Fiennes an inspiration to you?

AH: He's a previous generation adventurer who's built his career by being tougher than all the rest of us, being properly hard and aloof. I've gone for the opposite approach, trying to be much more honest and human and open about difficulties and how I find things. I'm a big fan of Ranulph Fiennes, but when people ask him why he does adventures his answer is always "To pay the bills". I find that infuriating.





Alastair Humphreys' top 10 tips to becoming an adventurer!

1 Simple Keep packing simple. All you really need are things to keep you warm and dry. If you are staying overnight pack a sleeping bag, a camping mat to sleep on and a bivvy bag to keep you dry. Any extra space left over in your backpack, you can throw in some food and drink, a woolly hat and a torch.

2 Getting bivvy with it A bivvy bag is not just a waterproof cover for a sleeping bag, it's also a cheap, lightweight alternative to a tent for those who fancy sleeping under the stars.

3 Gimme shelter Don't let a bit of wet weather get in the way of a camping adventure. Build a basha shelter using a sheet of plastic tarpaulin, a few tent pegs and some rubber bungee cords. It's an inexpensive and easy way to get extra coverage from the rain.

4 In the air tonight Autumn is a great time of year for adventures, but remember it can get chilly especially at night. Wear water-resistant and winter-warming clothes, plus a woolly hat and if you are staying out for the night, don't forget a camping mat to ensure you

get a dry night's sleep.

5 Dress for success Don't let the cold weather put you off having an adventure. Wear decent shoes, warm items and a sturdy jacket, ideally with water resistant fabrics.

6 Going swimmingly Need to swim but don't want to get your backpack wet? Keep your things dry by using your bivvy bag as a waterproof flotation device. Place all your stuff inside and simply twist the top a few times to ensure it's watertight and you're ready to go.

7 Don't be raft Be ready for anything and take a pack raft. It's a rubber dingy but it packs down really small and is easy to carry on your back. It's a must-have accessory that will ensure your adventure becomes even more exciting for you and your friends.

8 Some like it hot You can cook so much on a campfire without many tools. Fruit and vegetables like aubergines, corn on the cob and bananas can go straight on the hot coals, no

foil is needed and they taste delicious.

9 Light my fire Having your own campfire can be the most exciting part of any adventure, but it is vital to do it in a way that is safe, responsible and considerate. Keep your fire small and containable so at any time it can be put out. Leave no trace once you've finished with the fire and its embers have died down. Douse it with water to make sure it's totally out; cover with wet leaves and water again before you leave.

10 Dancing the can can make your own camping stove out of an old drinks can. Use a multi-tool like a Leatherman Rebar to cut inside the rim of the can to remove the top and slice around the middle (the top half should be one finger-width bigger than the bottom) – be careful, as the edge is now sharp. Crimp all the way around the top half of the can to create small channels that the gas will burn up. Slot the sections together, make a small incision into the top half of the can to allow some oxygen into it and finally, add some fuel and light your stove.

■ Alastair Humphreys (alastairhumphreys.com) is an ambassador for Wrangler's Born Ready Adventures campaign, which aims to inspire everyday adventures just outside city limits. He's created interactive online maps featuring guides to adventures in and around London, Manchester and Edinburgh. More information, wrangler.com/bornready.



**Jack
Wolfskin**

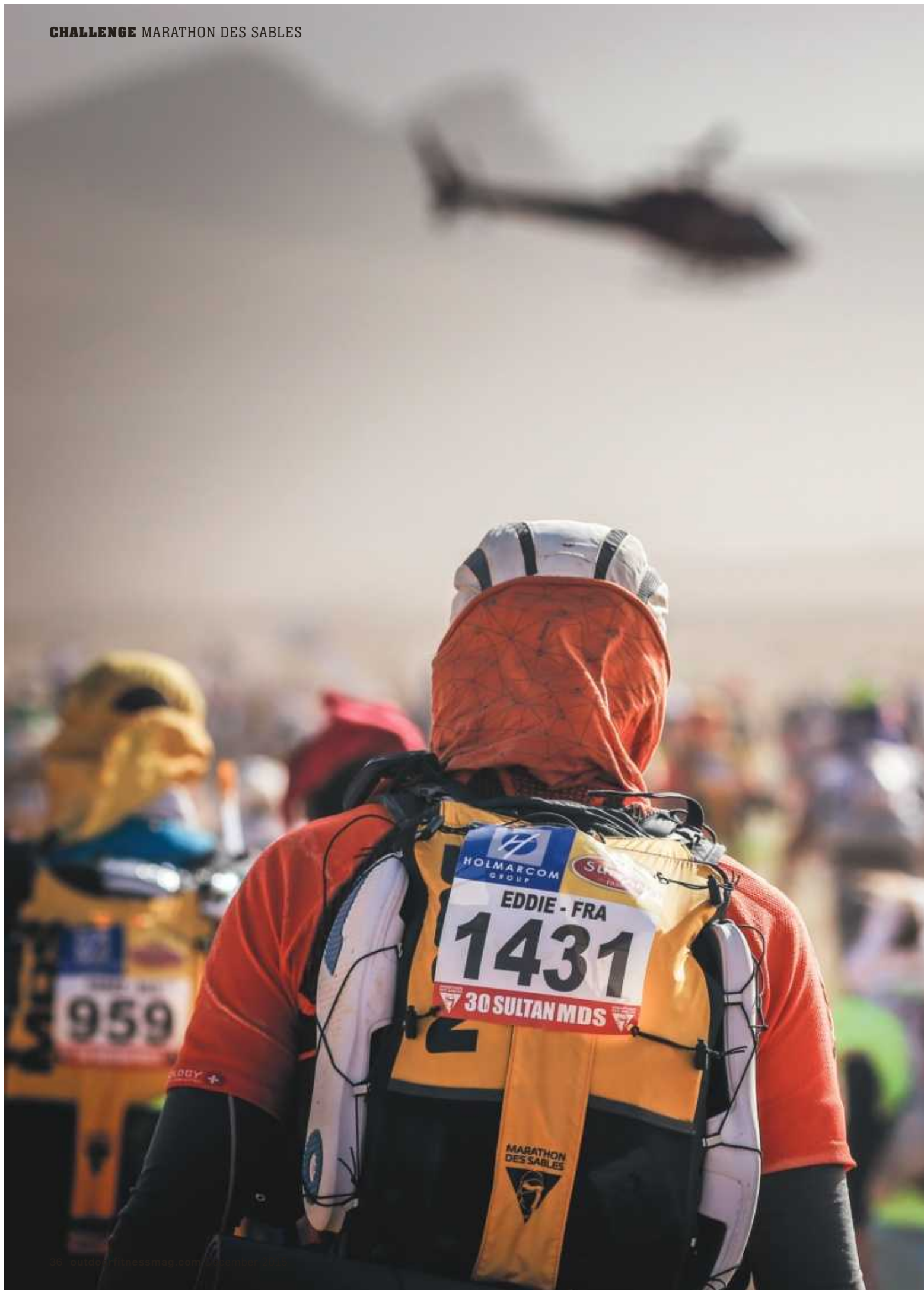
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MARATHON DES SABLES

ESSENTIAL GUIDE

The Marathon des Sables (MdS) claims to be “the toughest foot race on Earth”. It isn’t. But the terrain and temperatures ensure the six-day, 156-mile multi-stage race through the Sahara is still pretty tough. Here’s how you can complete it.

Words Damian Hall **Pictures** Ian Corless & Marie Curie





THE MARATHON DES SABLES IS SPECIAL

Rory Coleman: “For me, the Marathon des Sables is Christmas. I see the same people once a year. It’s a chance to go away and have a retreat at a place where I feel really comfortable. I feel a part of the race. I feel really alive. There’s something magical about the desert. It doesn’t matter who you are in your normal life, everyone’s the same there. I’ve done all these races around the world, but at the end of this one you put your arms in the air as you cross the finish line and feel that unique MDS spirit. You’re in a big family. It’s just awesome.”

THE CHALLENGE: THE HEAT The race takes place in the Saharan desert, where temperatures can reach 50 degrees Celsius with high humidity levels.

RC: “The MdS is all about feet and heat. Heat chamber training for the MdS has really taken off. Essentially what you’re doing is teaching your body to sweat less. However, the effects only last about 10 days, so most people will feel the benefit for about two days of the race, then everyone else’s body will have adapted too.

But you can see a real difference in those first two days. It is quite extraordinary. However, you also do not want to start the race knackered, so do five sessions of 8km or an hour of running, in the 10 days before MdS and you’ll be sorted. Test out salt drinks and

THE EXPERT Rory Coleman is a performance coach who’s run the Marathon des Sables 12 times. He coaches clients from Sir Ranulph Fiennes to couch potatoes and gets them to the finish line. rorycoleman.co.uk

gels whilst in the heat chamber too. Do your last session, leave the heat chamber and go straight up the steps onto the plane.

If you can’t get to a heat chamber, run on treadmill, sit in a steam room, then get back on the treadmill. That should give you the swirling-head tunnel vision you’ll get at MdS.”

THE CHALLENGE: THE SAND Sand is no one’s favourite running surface. It makes you slow, makes your muscles, tendons and ligaments work harder and sand gets everywhere.

RC: “At Merthyr Mawr, Bridgend, there’s the Big Dipper sand dune – the biggest single sand dune in the northern hemisphere. When I’m training for MdS, I’ll run 20-plus miles there once a week. It’s like running in treacle. There’s a real technique to it. It’s all about your heart rate and being rhythmical. Find that elusive rhythm and you’re okay. Go too hard and you literally sink. As soon as you walk, you’re stuck in a walk.

And believe it or not the humidity there can

be similar to Morocco.

I see people running round Richmond Park to train for MdS. I’m not sure which parts of the Sahara Richmond Park mirrors.”

THE CHALLENGE: THE PACK

You’ll be carrying a pack weighing between 6.5-10kgs. This will push you further into the sand, make your shoulders angry, mutate your gait and slow you right down.

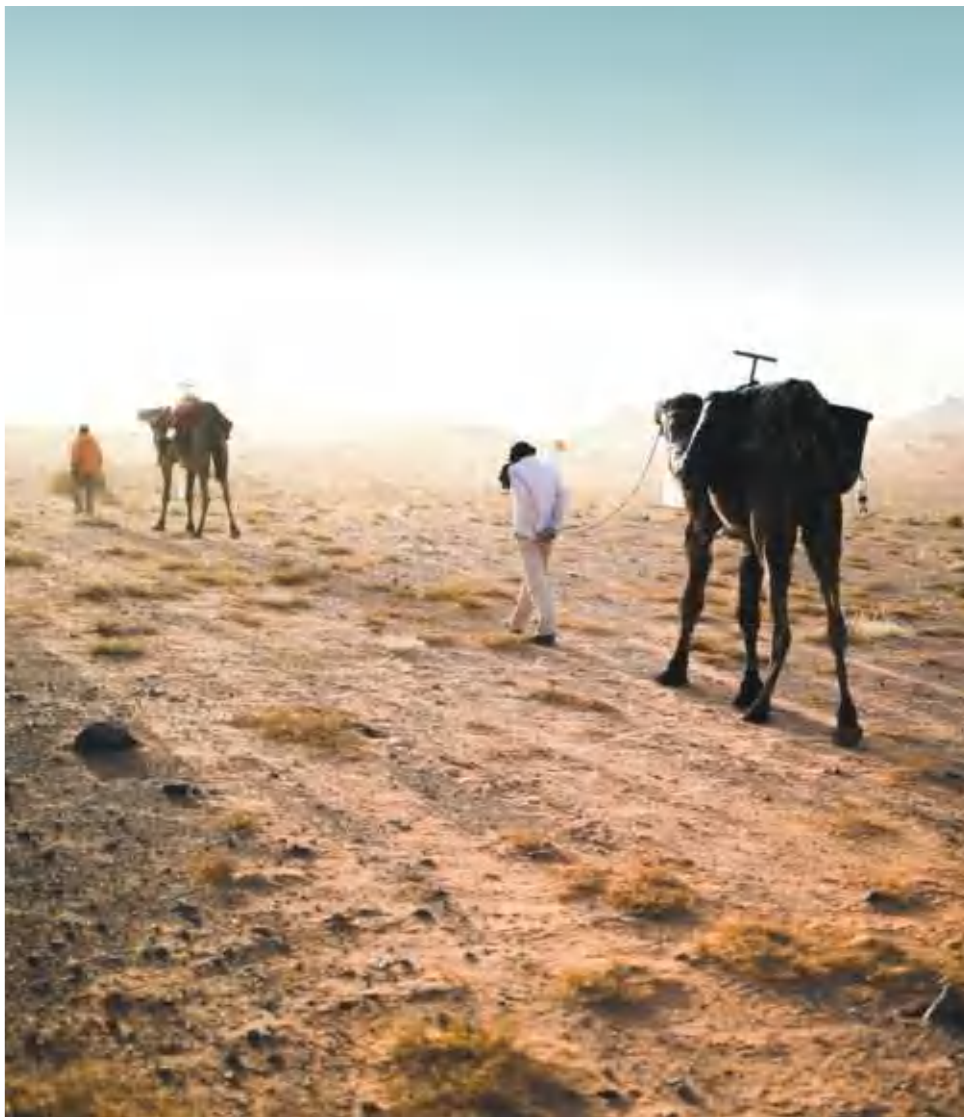
RC: “I have three golden rules for MdS: weigh as little as possible yourself (within reason), carry as little weight as possible in your pack (no more than 10 percent of your body weight) and do some training.

Race rules stipulate your pack has to weigh at least 6.5kgs. The lighter you and your pack are, the less strain there is on the body and its muscles, ligaments and tendons, and you can therefore have a fantastic running holiday.

Extra weight on your back can cause strain on your IT bands and Achilles tendons. Run with your pack once a week in training. Fill the pack up gradually with all the weight you’re losing yourself. I call this negative pack equity. You’ve lost 1kg from your waist. Stick 1kg in your pack. This way your body is used to running with the same weight and there’s no dramatic adjustment for it to make.”

THE CHALLENGE: THE MORNING AFTER

After the first day, you have to get up and do the same the next morning. And the next...



RC: “Christmas is the big training time. Do a mini MdS between 25th December and New Year. That means 20 miles a day for five days. Break it up over a day if you have to, some in the morning, some in the evening. Walk it, crawl it, whatever, just cover the distance. You need to know how it feels to wake up and not want to do it. At the end of day five at the MdS you will be so glad you’ve done that. It’s a massive confidence booster.

Practice hiking too. If you lose all the skin on your feet on day one, which does happen, and walk the whole race, you’ll use different muscles and ligaments to running. If you’ve never walked 26 miles that’s going to be more uncomfortable than it sounds.

On the long day you climb Snowdon nearly three times. So go run up some mountains to simulate that.”

THE CHALLENGE: THE KIT But which equipment is best for running in the desert?

RC: “With equipment, the race’s fear factor often leads to over complicating things. If you say you’re taking something “just in case”, you definitely don’t need it.

Take a very light rucksack. I go with a 387g RaidLight Olmo 20. But that’s less important than how much weight is inside it.

Take a good sleeping bag. Some people take a sleeping bag, a liner, extra clothes... But why not take a good, warm (-5 rated) sleeping bag that weighs 700g and you’re sorted. I use a

RaidLight Combi-duvet and no sleeping mat.

Don’t wear compression clothing because it’s not very breathable and it’ll make you sweat, losing water and electrolytes more quickly. White reflects heat back onto the body. So wear baggy – which lets air through and helps wick sweat away – black clothing.

The only luxury I take is music, to get in the zone (and perhaps a charger for my smartphone). If something of yours is broken or you forget it, people can lend it to you. Last year a guy arrived at MdS and his suitcase had gone missing on the flight. Other runners clubbed together and got enough extra kit for him. It’s interesting how much people throw away during the race too, sometimes expensive things.”

THE CHALLENGE: THE FUELLING Every gramme counts as it has to be carried, but you need enough calories to power you to the finish.

RC: “Take high energy foods, protein and carbs – the last thing you want is porridge or chicken tikka. Powders count now, so I make milkshakes. Nuts and beef jerky are nice and easy to eat. I also love custard and strawberries. Take a buffet, lots of different things. You’ll go off some things. During the run you need sugar - gels are really good, Shot Bloks, fruit pastels...”

THE CHALLENGE: THE FEET Running 156

miles in the desert can make your feet angry.

RC: “I’ve been blister free on MdS for as long as I can remember. You don’t need trail shoes, you’re on sand so there’s little need for extra grip. Wear road shoes, they’re nice and wide. That width is there for when your feet expand and spread or if your toes need taping. I pre-tape my toes. I tape the big, second biggest and little toes and wear my socks inside out – so there’s no rubbing from seams. If shoes start to feel too small, just take out the foot bed. Gaiters are a must to keep debris and sand out. I use RaidLight ones.”

THE CHALLENGE: THE RACE How to enjoy rather than endure MdS.

RC: “It’s not ultramarathon running. It’s a self-sufficiency race. It’s about how you manage yourself. You’ll need 13 litres of water a day, so drink at 15-minute intervals. Eat a minimum of 2,000 calories a day – you need 2,300 really. Eat before, during and after the run. Be orderly. Have a place for everything, Eat even if you don’t feel like it. If you don’t want to eat you may be dehydrated. Look after your feet. When you get to camp, are you going to be doing lots of chatting or resting? You need to start the long day with your feet in one piece. Running 50 miles with dysentery is no fun at all, you’re dehydrating to power of 10. Get some sleep. Go to bed at dark (7.30pm), to recover. You should love doing MdS, not hate it.”

Sir Ranulph Fiennes' MdS tips

"For the MdS, additional mental drive certainly helps, such as doing the race for a charity.

Our food rations were from a company called Be-Well Expedition Foods. Dr Mike Stroud, senior lecturer in medicine and nutrition at Southampton University, is the best person in the UK at designing rations for specific, difficult challenges which involve endurance. We've worked with him for 26 years and he's been brilliant. Be-Well turned his suggestions, and Rory Coleman's input into individual rations.

That said; I find if I do this sort

of thing for six days, for some reason, I don't get much of an appetite. On a polar expedition you get hungry even though you have 5,000 calories a day. They had rubbish dumps in the Sahara, so I dumped food because every bit of weight was good to get rid of.

In terms of equipment, the rucksack Rory gave me was excellent, tailor-made for the MdS. The shoes were a type I'd never used before, again Rory gave them to me. They were both key.

MdS was incredibly well organised, very efficient. I would definitely recommend the event."



MdS from the inside...

SUSIE CHAN Susie completed MdS in 2013 (placing 636th) and in 2015 (placing 174th and 13th female – and got engaged).

What's so great about MdS?

It's such an iconic race, being part of it feels very special. You read a lot of things about it, about making friends for life, the camaraderie, the tent life... these are all true.

How tough is it really?

It's quite tough, but the more you train for it, the easier it will be. People worry about the sand, but it's the rocks that really hurt. The day on day nature of it all can take its toll, and the long stage can be tough. Simple things like well-chosen food and kit make all the difference. Get these right, and you will have a much easier time of it.

Any tips for first timers?

Heat and sore feet are two things which will slow you down. Prepare for them as much as possible. A lighter bag will also ease the burden. Pack a variety of food. Try out your kit in multistage ultras before hand; these can be great places to make up your tent prior to getting to the desert! Don't forget to take it all in and enjoy it when out there. You are in for a treat!

Simple things like well-chosen food and kit make all the difference.

ALLAN COX Allan completed MdS in 2012, placing 362nd

What's so great about MdS?

It's the London Marathon of multi-day stage races. The challenge of managing body and mind over multiple days in a harsh environment. The satisfaction of finishing. Discovering so many different types of sand. Hot days, cold nights. Roughing it. The camaraderie of tent buddies. Hunger. Blisters. Sweat. Salt. Thirst. Pooping in a bag. Dehydrated food. Opera. Daily pre-start party atmosphere. AC/DC's *Highway to Hell*. Dark night skies, starlight. It all make the MdS unforgettable.

How tough is it really?

It's easier than UTMB (Ultra-Trail du Mont-Blanc) as you get to sleep! The running is the easy bit. The sleeping on hard ground in an open tent, gradual starvation and sand in every bodily crevice won't appeal to everyone. But I have always enjoyed my beach holidays and you don't have to wash for a week! It's achievable by any experienced runner with a can-do attitude.

Any tips for first timers?

Look after your feet – wear shoes half a size larger and two pairs of socks to prevent blisters. Loose shorts and separate pants so you can air your bits whilst maintaining your modesty whilst drying your undergarments at the same time. Take a camera and stop for five minutes to enjoy the view – you probably won't be able to afford to experience it for a second time. Manage your energy levels, start steady and speed up as the week goes on. There's no point burning out on the first day.

DANNY KENDALL Danny has run the MdS seven times, placing in the top 10 three times, including fifth in 2014, and is a member of the Scott Sports UK Trail Team.

What's so great about MdS?

It's more than just a race, it's an adventure, where you are part of this big circus moving across the desert from bivouac to bivouac. Life during race week is very simple, all you have to do is get from point A to point B as fast as possible and then recover enough to do it again the next day! Camp life is another big part of the experience.

How tough is it really?

It's as tough as you make it! The cut-offs are reasonably generous so if the aim is just to finish, then assuming a good level of fitness, it doesn't have to be that bad. But if you go out there to push yourself to your limit then the various challenges of the race such as the heat, pack, having to run day after day, food and water restrictions, make it deserving of its tough reputation!

Any tips for first timers?

For training, be as specific as possible. The base of your training should look similar to a marathon training plan, including speed work, some back-to-back long runs (the Pilgrims Challenge is a good one, xnrg.co.uk) and lots of running off-road (cross-country races and anything muddy is good). Also include some sessions with a pack of course (but don't go nuts with the weight!). Definitely do some form of heat acclimation. For the race, take a light pack and a positive attitude!

It's more than just a race, it's an adventure, where you are part of this big circus moving across the desert from bivouac to bivouac.



HOW TO ENTER MDS

To register interest in the Marathon des Sables, visit the UK version of the event website, marathondessables.co.uk. The race normally goes on sale 16 months in advance and typically places fill within an hour. However, there's also a waiting list to accommodate additional places that may become available and charity places offer a further option. The UK and Ireland get 500 places at the MdS, which counts for more than a third of all entrants

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Steep steps on
the final climb to
Ingleborough

DRINKERS

Racing cyclo-cross bikes over the summits of Ingleborough, Whernside and Pen-y-ghent is not for the feint of heart or the feint of mind. Jon Sparks speaks to three conquerors of the Three Peaks Cyclo-cross.

Words & Pictures Jon Sparks



THE RIDERS:

NICOLA DAVIES

Riding her 5th Three Peaks: improved her over-50 women's record to 4.25.59



JON BARDGETT

Riding his 7th Three Peaks: set a personal best of 4.09.46



MARK WILDSMITH

Three Peaks first-timer, finished in 4.21.01



Jon Sparks: How did you train for the Three Peaks?

Nicola Davies: I'm pretty fit all year. I should have done more longer off-road rides. I think the leg cramp might have been less severe then.

Mark Wildsmith: I do a fair bit of road cycling and got into fell-running this year. I tried to include steep climbs on my runs. I built the cross bike a couple of months ago and did more off-road riding to build up my skills, practicing descending and carrying the bike up-hill. I ran the Three Peaks the month before the race, which gave me a sense of scale and mentally prepared me.

Jon Bardgett: I started riding my cross bike for everything about three months before-hand. I also did a few "carry bikes" over High Street and other hills in the Lakes, and also did long days out on the bike. And a bit of fell running as well.

JS: How did you set up your bike, was anything different from a normal cyclo-cross race?

MW: I haven't done a "normal" cyclo-cross race! I rigged a 42-28 chainset using the inner two rings of a triple to get low enough gears for the steep bits and high enough for the flat road sections. I used cross-top brake levers – I was glad I did as they gave a change of position on the long descents. Tyres were Schwalbe Landcruisers. Pipe lagging on the top tube is a good idea: there is a lot of carrying!

JB: Basically my cross bike was the same as normal, but I fitted a 11-34 block, an MTB rear mech and Landcruiser tyres at about 75psi, this offered excellent grip and low rolling resistance. They're heavy but it's worth it for the peace of mind of not puncturing.

ND: I tried to fit Landcruisers onto my wheels and then found out that they don't fit onto my rims properly (it was the same as last year... short memory!).

JS: How did you feel on the start-line?

MW: Apprehensive! I started looking at other people's kit and wondered if they knew something I didn't. But I tried to stay focused and took some deep breaths.

JB: Nervous... sick... wondering what I was doing there...

ND: Surprisingly calm... though with the occasional shiver of fear!

JS: Was there a big scramble for position early on or did the neutralised start allow things to settle down?

MW: It didn't feel neutralised to me! The hammer was down from the off with lots of people trying to get to the front. There were some collisions, so I made sure I had space and kept looking ahead... it was all a bit hectic really.

ND: There's always a big scramble. I just try and stay out of trouble. There were several crashes and unexpected slowdowns. Mayhem.... It might have been alright up front.

JB: Behind the car the top riders have an easy time, a nice steady start. Behind, it's a bit scary... a lot don't know how to ride in a pack, so there are crashes, the compressions from corners cause blockages and the front of the field pull away. After Horton you can start to pick your way through the pack as the road steepens... Eyeballs out all the way...

JS: Did you ever have any doubts about finishing?

ND: No. It's tough, but it's still less than half a day's exercise.

JB: When I fell off coming off the top of Whernside and started sliding down the steepest part of the hillside (the one place you wouldn't want to fall!), finishing didn't matter any more... I just didn't want to get hurt. I also got bad cramp at Ribbleshead and it didn't feel like it would go away.

MW: Only once, halfway up Whernside. I was stuck in a line of people trudging up the endless steps. The question: "Why am I doing this?" popped into my head. It really wasn't much fun, I had the beginnings of cramp and I knew the descent would be tricky. But once I reached the summit I knew I'd be OK.

JS: How technical do you think the course is? How much did you carry the bike and how much did you ride?

JB: The course does have some quite technical bits but apart from the climbs it is all ride-able.

MW: For me the only technical parts were on the descents. On a mountain bike you'd fly down. On a cross bike with no suspension and thin tyres you have to know your limits, when to ride and when to carry. The trickier uphill sections were too steep to ride anyway; I knew it'd be mainly carrying up Ingleborough and Whernside. I thought I'd be able to ride most of the gravel section up Pen-y-ghent but I ran out of steam and ended up pushing.

ND: I love the off-road stuff. There's a bit of a carry on all three ascents, but it's mostly riding... and just right for cyclo-cross bikes... bumpy but fun.

JS: Many people said conditions were the best for years. How did it seem to you and how did it affect your race?

ND: Conditions could not have been better. No wind (unusual), dry, and even not too hot. Perfect.

MW: It was comparatively dry, but it was a lot drier the week before. It was pretty boggy at the top of Simon Fell and parts of the descent off Ingleborough. In wet years it must be horrendous!

JB: Rain on Thursday had made some descents wetter than you might expect, but the course actually stands up to adverse weather very well... I think the weather on the day makes more of a difference. It made the race better because you could see who was in front of you.

JS: Which of the Three Peaks was best or worst and why?

ND: They're all good and very different in character. There's a huge sense of relief once you get to Ribbleshead after the descent of Whernside. Coming down off Pen-y-ghent you just pray you don't puncture.

MW: I enjoyed Ingleborough the most. I knew Simon Fell would be tough so I was prepared for it, and the summit came surprisingly quickly. The descent is actually quite fun as it's grassy on the lower slopes. Whernside I found soul destroying on the stone steps going upward; the almost rideable humpback is frustrating, and the stop/start of the downhill tiring mentally.

JB: They all can be the worst and the best... however, this time Ingleborough was the worst because the start is so hard... it's good to be over it and hitting the fast road. Whernside was also bad because the descent is so hard you worry about punctures. But it's technical fast and a good place to gain places. Pen-y-ghent another worst! Because it's the last and hardest climb and your body is giving up. But it's also the best because it's the last descent...

JS: What was the highlight of the race?

ND: Not having any punctures/serious mechanicals. And of course completing it.

JB: The beer at the end. Seeing Nic and knowing she was having a good race.

MW: Getting my timing chip dibbed at the top of Pen-y-ghent knowing it's all downhill and then smooth tarmac to the finish!

JS: Would you do it again?

MW: Unquestionably, yes.

JB: Of course... it's the best race there is.

ND: Yes. It's one of my favourite races (of any genre). It's totally unique, and obviously quite crazy. Racing cyclo-cross bikes over the summits of Ingleborough, Whernside and Pen-y-ghent... it's bonkers!

THREE PEAKS CYCLO-CROSS

Race distance

38 miles (of which 34 are rideable)

5,000 feet of climb

■ You can only take part on a cyclo-cross bike with drops

More info, 3peakscyclocross.org

**Approaching the top of
Ingleborough with
Whernside behind**



*I started looking at other people's kit and wondered if they knew something I didn't.
But I tried to stay focused and took some deep breaths.*

**After a short rocky
section the Ingleborough
descent soon gets easier**



**On the final stages of
the Ingleborough
climb**



**A brief descent
but the final
climb to
Ingleborough
looms ahead**



NORTH POLE MARATHON RUNNER

The GPS track of one of the world's most unlikely marathons is astonishing. Its wavering path encircles the race start 12 times but somehow never returns to the same place. It doesn't even get close.

Words Cath Harris





S

uch is the movement of three-metre thick ice across the vast, desolate but magical top-of-the-world that runners completing last April's UVU North Pole Marathon finished an incredible four miles from their geographical departure point where below an incongruous black gantry up to 14 hours earlier, the starting gun had echoed.

Among them was Chris Petrie.

"It was surreal, unbelievable," he says, delightedly glowing at the memory of his six-day visit to one of the globe's most inhospitable regions. And so he should. Of the 44 starters, hypothermia and frostbite meant five failed to finish. "With wind chill it was -41°C and the weather was getting worse," Chris shivers. "The people coming in last were the bravest."

With adventure races now testing not only fitness but spirit and grit too, the North Pole Marathon must rank among the most daunting. It took Chris, a 47-year-old Northampton-based financial advisor, a mere seven years to feel sufficiently brave to enter the event which at €11,900 (£8,673) a throw is not a commitment most of us could take lightly. "My sister bought me a book for my 40th birthday called *A Year of Adventures*, which was a bucket list of things to do around the world. I was skimming through it and saw a side bar on the North Pole Marathon with a photo. People were slogging around on ice under a beautiful blue sky. I'd always liked running and really fancied it. It was as simple as that."

The event was lodged in the back of Chris's mind but every time it crept forward, he'd nudge it into reverse. Time drifted, "But as each year passed I knew it had become a little bit harder," realised Chris. Finally, in September 2013, he contacted race director Richard Donovan to register and pay the €4,000 deposit. "There wasn't a huge waiting list," he jokes. "But when I woke up the next morning I was concerned about what I was in for." Chris is a wary flyer and faced eight flights if he wanted to complete the trip. "The flying is what worried me most."

The running bothered Chris much less. He had cruised through cross-country races at school and completed the 2007 and 2008 London Marathons, and a half marathon, on minimal preparation.



"Other than that it was occasional 10kms. I'd had four years without much training." Such was Chris's confidence that he delayed training proper until late December, less than four months before the April 2014 event. "I ran 10 miles and was a bit stiff and achy and realised then that I'd have to step up." Chris increased his mileage quickly and once he'd completed a 25-mile road run, switched to the country. "Slogging through the fields in February was tough."

As his fitness improved, Chris began to trial the clothes he would wear, settling for Merino wool base layers and ski gear. "It was 2°C or 3°C at home and you could get quite sweaty, this is something you have to avoid in the North Pole because you then get very cold. But I needed to get used to running for hours in all that clobber."

With less than a week to go, Chris boarded for the Norwegian capital Oslo on Easter Sunday, having packed all his layers and a selection of chocolate fairy cakes baked by his daughters Olivia and Lucy. A day later he flew on to tiny Longyearbyen on the island of Spitsbergen, the world's most northerly continuously-inhabited settlement. The former coal mining town lies 850 miles from the North Pole, where runners would head within 48 hours.

A hitch, however, in preparations left the group idling in Longyearbyen for three additional days. The Russian cargo plane due to transport runners to race HQ, Barneo Ice Camp, was stranded with a damaged under carriage. "They had to send out another plane which meant five days of waiting in Longyearbyen. I used the opportunity to do the cold weather acclimatisation I had missed out on at home," explained Chris who had hoped to visit Scotland or the Alps to train on snow but had run out of time.

RACE DAY Race day finally came with the first batch of runners, organisers and doctors flown to the start on the 10th April. But the weather worsened and the remaining participants, including Chris were delayed a further 24 hours. The race began at 1pm - just two hours after Chris arrived. "It was a beautiful day and the first few laps went past like a dream." But the idyll did not last and with wind whipping snow into runners' faces "it just got worse and worse".

Conditions took their toll and many of the runners sought shelter, warmth and food inside a heated tent after each 2.2-mile lap. Organisers keep runners close at hand in case of medical emergencies. "I decided before the start that I would come home safe so returned to the tent at the end of almost every lap. I ate the cakes my daughters had made, had a cup of tea and changed my clothes. That took a long time. I reckon I spent two hours in the tent in total. The winner didn't stop at all."

Regular pit stops meant positions changed often, which sometimes altered the outcome. "One lady had to withdraw because of hypothermia and another was kept in the treatment tent because of frostbite. Her scarf had stuck to her neck and they held her there for 40 minutes. She was going to be first woman but lost her place. She was quite cross." Chris got off more lightly, suffering a small burn on his neck from frostnip, a step down from frostbite. "Most of the time I could see other runners but with people dipping in and out of the tent there were times when you saw no-one. It was a bit like Formula 1."

Chocolate cakes were not Chris's only sustenance but were perhaps the most appetising of the food on offer. "We had porridge, soups and broths, the sort of food you might expect in Russia. It did the job



RACE ROUTE

The Arctic climate gives organisers just a month to complete preparations and stage the race. Any earlier and it would be too cold and dark (darkness shrouds the region throughout the day and night in winter); melting ice makes running too dangerous any later. To construct the race base, a tractor is dropped by parachute from a Russian cargo plane and used to carve a runway. A second plane brings provisions and tents before participants arrive. "The North Pole has no land, it's just a frozen sea," Chris says. "They can't get the tractor out again so it's left to drop to the bottom of the ocean." Competitors start together with only small flags, planted in the ground to guide them around the 12, 2.2-mile laps. Armed guards patrol the route, to deter polar bears. Ideally, runners return to Longyearbyen the same day but poor weather meant Chris's group had to stay overnight. Their trip ended with a midnight helicopter flight to the true North Pole. "The temperature with wind chill must have been pushing -50°C . It was bitter, absolutely horrible."

TRAINING

Chris ticked over with irregular 10kms but that 10-mile run in December 2013 showed he was less fit than he thought. "After that I ran three times a week for between four and six miles then at the weekend I'd do a long run." He started with 13 miles, then increased the distance to 15, 17, 20, 22 and 25 miles. "At first I'd stiffen up after about 1.5 hours but soon I was fine for 2.5 hours." Chris then turned his attention to clothing. "I hate running in gloves, no matter how cold, so I had to get used to that." For the race he wore Salomon trail shoes, three pairs of socks, gaiters, Merino wool tights and long-sleeved top, a mid layer, salopettes, a ski jacket, gloves and mittens. He protected his head with a balaclava, face mask, neck gaiter, hat and goggles.

CARBON FREE

Organisers have invested in forestry projects in the Brazilian Amazon to win "carbon-free" status for the race. Emissions from all aircraft and helicopter flights, and fuel used at race HQ, are used to calculate an equivalent off-set investment.

RACE HISTORY

Pioneering race director, ultra-runner Richard Donovan, ran the first North Pole Marathon on his own in 2002, four months after winning the first South Pole Marathon (now Antarctic Ice Marathon), which is also run by Donovan's firm Polar Running Adventures. A test event was staged at the North Pole in 2003. The race has been staged 13 times and is held annually. More info, nparathon.com

although the toilet facilities were horrific." Back outside, the weather was deteriorating. "We had to jump over a crack in the ice every lap which I thought might widen, and I was scared of strong winds whipping up an ice storm. It was very bleak. There's nothing there but ice."

With eight laps completed the temperature had dropped to -35°C which with wind chill, was recorded as -41°C . But Chris still had energy to burn and set out for his last two circuits determined not to walk or stop. "I could see people walking ahead but it took an incredibly long time to catch them. Almost everyone walked at some stage. The whole route was on lumpy, crusty ice up to your ankles. You couldn't get any bounce from it."

It was with some elation that Chris crossed the finish line in 30th place, with a time of 8:28.20. He and most others were some way behind Czech winner, Petr Vabrousek, who clocked 4:22.24. Vabrousek is a professional athlete and has completed more than 150 Ironman triathlons. "I never doubted that I would finish but I could perhaps have been a bit quicker if I'd been more adventurous and aggressive," Chris says. "But I didn't want to hurt myself or come home with nine fingers."

"If I did it again I would train on a beach because that's like running on snow. I expected the ice to be compact because in the past they have incorporated the plane's runway. But this time the course went completely off-piste. I'd also train more in colder conditions. Some of the guys even put treadmills into ice stores to help with acclimatisation. There was massive camaraderie but I won't do it again. I want to do the Antarctic Marathon instead!"

ABOVE: Conditions took their toll and many of the runners sought shelter, warmth and food inside a heated tent after each 2.2-mile lap.

THE MAN WHO CAN'T STOP RUNNING

Multi-marathon man Steve Edwards, 52, has run 700 plus marathons in under three hours and 17 minutes – one of several of his world records.

Steve reveals why, how he trains and how marathons have become a way of life

Words Damian Hall Pictures Team Edwards

Steve's 700th marathon was the Bournemouth marathon, when he crossed the line he also became the first athlete in the world to run 600, sub 3-hour 30-minute marathons and the first British athlete to run 300, sub 3-hour 15-minute marathons, and he ran his last 100 marathons in just 106 weeks. For the statisticians amongst you, Steve has now ran a marathon on average every 14 days for the last 27 years. Not bad for someone who used to try and get out of cross-country races at school and ran his first marathon for a bet.

Damian Hall: You run rather a lot of marathons. Why?

Steve Edwards: There are many reasons. I enjoy running, it keeps me incredibly fit and makes me feel good physically and mentally. But it's also a way of life, there's a great camaraderie and social side to it and I've made many friends. I've also visited many wonderful places I wouldn't otherwise have seen.

It's also been about putting something back. It's enabled me to raise around £25,000 for charities. It's amazing how many people contact me to say how it has inspired them to do something challenging themselves, which is humbling but also very powerful.

Why do I do these types of challenges? To explain, I would have to go back to my childhood, and one day I'll talk about that. For now, let's just say that as long as I can stay fit and healthy, I will always look to push the boundaries within my sport. It's in my nature! Knowing I've already achieved something no other human has achieved is a fantastic thought. Focusing on something that may never be emulated is an even more fantastic thought.

The body is an amazing machine. It's said that the human

brain is under-used and that's also true of the body. It never ceases to amaze me just how much the body can respond when tested. You haven't lived until you've experienced that feeling of pushing your body to the absolute limit!

DH: How did your marathon running start?

SE: My first marathon was in October 1981 in my then hometown of Coventry. I saw posters going up, thought why not and made a bet with some mates about being able to complete it. I was 18 and it was my first road race. At school I ran 400m and occasionally 800m, but hated longer-distances and cross-country and would try everything to get out of them! After finishing in 3 hours 38 minutes, I thought I'd conquered the world. However, the following day I had to crawl down the stairs backwards. It took me nearly a week before I could walk properly and I swore I'd never run one again!

DH: What is it about the marathon that you love?

SE: After the pain had gone, I realised how good it felt to be extremely fit and to run freely without getting out of breath. I tried different distances, five miles, 10 miles, 10Ks, half marathons, but I didn't get the same buzz. I also seemed to be more geared towards endurance and had greater success at the marathon distance.

A coach thought I could run around 2 hours and 30 minutes, with the right training. A fantastic time for my running CV but it was never going to win a major city marathon. So I thought about becoming an extreme marathon runner and setting running records instead. It would mean running reasonable times consistently over a long period of time, a completely different discipline, as longevity over many years would play a major part in whether I would be successful. The 1,000 marathon barrier

*"You haven't lived until you've
experienced that feeling of
pushing your body to the
absolute limit!"*



has to be the ultimate goal. But only if I can continue to run them in reasonable times, because that's what gives these records credibility.

DH: Would you say you are addicted to running?

SE: Definitely. But in a positive way. Some people use the word obsessed, but that's a word used by the lazy to describe the dedicated! Most athletes will say they have to be focused and determined, almost to the point of selfishness, to achieve their goals.

DH: How do you train?

SE: I do 45-60 miles a week of running, depending on whether that week includes a marathon. I vary the routes and types of session, I try to fit in steep hill reps and a threshold run most weeks, and I vary distances from anything between 4-10 miles. With age I've had to learn to train smarter, rather than harder, however I do push myself and it always seems like hard work, even harder as I've got older! I also cycle to and from work 2-3 times a week, approximately 30-40 miles. I also do about six sessions of core work and a weights session each week. Maintaining and improving overall body strength and posture has helped my longevity and made me a more efficient runner, this is especially important in the latter stages of 26.2 miles, for maintaining good form.

DH: Have you had many injuries and what do you do to prevent them?

SE: On average I've ran an official marathon every 14 days for the last 27 years and if you add the training miles, my body has held up pretty well. Aside from odd niggles, such as muscle tears, strains and soreness, the only real injury I've had was a stress fracture in my ankle. Having a good foundation of fitness from my younger days when I did weights, circuit training, martial arts, and generally coming from an era when all kids were very active, gave me a good platform.

I also pay particular attention to nutrition, taking good quality supplements, natural-food based kinds. I'm also particular about hydration, again all natural, not containing loads of sugar, artificial colourings or flavourings. I'm also particular about recovery after racing and training, with stretching, a protein drink, ice baths, a foam roller, having a

STEVE'S MARATHON RECORDS

Some of these records have since been bettered, but have included:

- The youngest person to run 100 marathons
- The youngest person to run 200 marathons
- The most official marathon races in one year: 87 (in an average time of 3:14)
- The fastest time to run 10 marathons in 10 consecutive days
- Running 400, 500, 600 and 700 marathons in the fastest average finish times
- The first (and only) person in the world to run 500 official marathons in under 3:30 (with an average finish time of 3:13:16)
- 600 sub-3:30 marathons
- 300 sub-3:14 marathons
- A lifetime total of 701 marathons (at time of going to press)
- On average he's run a marathon every 14 days for the last 27 years
- He's closing in on 16,000 miles – with every mile run at 7min 27sec pace

massage every other week and compression clothing.

DH: How difficult is it to fit events and training into your life?

SE: I cycle to work, about eight miles each way, at least twice a week, or occasionally run it. I get there early and do a bit of core work. Most training runs are during lunch and when I get home I do a core or weights session before dinner and then have the evenings free to relax with my wife Teresa. I also run for a club, Bourton Roadrunners, where I'm chairman.

With a non-dependant adult son, it's just Teresa and me at home. We spend a lot of time travelling to events, so we're away at weekends a lot. Balancing my sport with everyday life can be challenging, however without Teresa's understanding, love and support I couldn't have achieved all I have.

DH: Have you ever been tempted to give up?

SE: There have been moments when I've questioned why I'm doing it and wondered what it's all about. But then I think about what I've achieved and what I could go on to achieve. I would hate to look back over my life with regret that I didn't fulfil the ambitions I had, or at least given them my best shot.



"The 1,000 marathon barrier has to be the ultimate goal. But only if I can continue to run them in reasonable times, because that's what gives these records credibility."



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Stumbling on faster running

According to new research we may all be running incorrectly.

RUNNING IS OFTEN described as a series of jumps. When our foot strikes the ground we naturally – and partly as a result of gravity and our biomechanics – want to displace most of the energy we are subjected to upward. We are much less efficient at translating these vertical forces into a more horizontal direction. This is obviously crucial for optimum running whatever your distance.

Norwegian physicist Otto Kanstad believes that running should be seen as a series of falls (not jumps). He wants to use gravity as a propulsive aid and not as something to be overcome.

SO HOW DO RUNNERS HAVE TO RUN TO GAIN MORE GRAVITY POWER?

The basic premise of Kanstad's technique – which he believes works for runners of all speeds from sprinters to marathoners – is to move the free leg forwards before the leg about to make footstrike hits the ground. It's almost a mistiming of the running stride. This creates a forward fall which needs to be recovered. It's this that when "caught" enables the runner to generate greater forward speed. Gravity is being worked with and not against.

THIS IS NOT AN EASY TECHNIQUE TO LEARN.

"The arms become very important as a counterbalance to leg movement," says Kanstad, "You have to change to almost opposite the way you are used to using your arms and legs."

Tests on runners who have learnt to run this way have identified 10% savings in oxygen costs. Apparently Michael Johnson – world 400m record holder and Olympic champion – is an exemplar of this gravity-assisted running. We always wondered why he was so fast and why his technique was different to all the others. Now we know.

Ref: Proceedings of the Royal Society A, DOI: 10.1098/rspa.2015.0287

Pictures Corbis



GIVE IT A GO

If you live in London and fancy giving roller-skiing a go, weekly sessions are held in Hyde Park and other venues, and training courses can be done with Snowsport-England qualified instructors, rollerski.co.uk



LEARNING TO GLIDE (WITHOUT THE SLIDE)

Entering a cross-country skiing race is one thing, training for it – when you live hundreds of miles from the nearest reliable snow – is quite another.

“NEVER MIND,” LAUGHS my 80-year-old cheerleader-come-critic. “You’re doing better than you were last week.”

Picking myself up from the floor (not an easy, or graceful, procedure when you have a 50cm-long appendage attached to each foot), I thank her, rearrange my ruffled dignity, straighten my helmet and pole onwards – along the seafront of the small Devon town that I call home, and which has never before been treated to the sight of a grown man roller-skiing.

I time my training to avoid school turnout, but around our way, the gangs of grannies are far more merciless than packs of teenagers would ever be. Some point and snigger, others openly laugh and heckle, and I’m sure one is deliberately racing me in her electric wheelchair. And winning. No bloody respect, that’s the problem with old people these days.

Training was always going to be tricky –

from the minute I signed up to do Norway’s famous Birkebeinerrennet, during a sudden rush of blood to the head after completing the mountain-bike equivalent of the race a few months earlier.

This 54km event between Rena and Lillehammer is more than a race in Norway. It’s a rite of passage, a tradition – phenomenon even – that sees 17,000 skiers take part every year. Having experienced the bike race, I jumped at the chance to do the original event, and in all the beer-assisted excitement I overlooked a salient point. I can’t ski. Not even a little bit.

I’ve snowboarded, a handful of times, but aside from a half-hearted crack at water-skiing when I was a kid, I’ve never been on a pair of skis in my life. Let alone cross-country skis, which – when I finally clap eyes on them – do not look like the sort of thing absolute beginners should be let anywhere near.

They’re outrageously skinny – like toothpicks.

From this feet-in-wet-concrete standing start, I have three months to get myself skilled-up and ski fit enough to complete an ultra-length marathon on snow. The good news is, winter’s coming. The bad news is, I live in the sunny Southwest of England.

Fortunately, I have a great coach in the shape of Jean-Francois. A former ski instructor, JF takes me under his wing and brings a Jedi master approach to proceedings. He’s confident I can do it but, like a Jedi master, demands commitment – “Do, or do not”. There is no try. I choose do – but where to begin?

SNOW CHANCE

There’s only one place to start: Sjusjøen, in the beautiful Norwegian Alps. This is my one chance to actually ski on snow before the week of the race itself, and over four days JF

“Having experienced the bike race, I jumped at the chance to do the original event, and in all the beer-assisted excitement I overlooked a salient point. I can’t ski. Not even a little bit.”



“One of Britain’s top cross-country racers, Andrew Young, tells me that elite skiers should be trail running 30 hours a month during summer, and punching out 3,000 metres in under 9 minutes. They also seek out the steepest and muddiest terrain to train on, for better returns.”

puts me (and photographer Henry) through an ultra-condensed crash course in classic Nordic skiing.

Unlike skate-style, classic cross-country skiing makes use of groomed parallel tracks, like inverted small-gauge railway lines. Technique is, of course, crucial. You’re not going to get far – certainly not 54km – by shuffling or trying to run with skis on, and the most important element to perfect is the glide, where you push off your back foot and glide on the front one.

Like all endurance sports, economy of effort is essential and the objective is to turn each movement into maximum forward motion – every metre you slide takes you several steps closer to the finish line. It’s all about harnessing kinetic energy.

This element can only be taught on snow, so we concentrate on the basics. After four days I still feel as though I’m moving around like a newborn giraffe, but JF remains confident. Before I leave, he gives me a pair of roller-skis and outlines a plan for how to train on concrete – and that’s where the hard work begins.

BALANCE

Effective gliding involves shifting your weight onto one leg and then the other, as you push and slide – which all requires balance. You also need to be able to take one leg out of the tracks in

order to do a half-plough and control your speed when descending steep slopes, which demands confidence and stability.

To improve balance, the most basic technique is to spend time standing on one leg. As you stand, gently bend and then straighten your knee, so you’re essentially doing one-legged squats. This is an exercise that can be done at any time. “Try and build it into your daily routine,” JF advises me. “So, while you’re brushing your teeth each morning and evening, stand on one leg and do some squats. Of course, your wife might laugh at you [he’s right, she does], but it all helps.”

CORE STRENGTH

Double-poling is a technique used on flat and slightly descending terrain, where you rise up on your toes, position both poles slightly ahead of you and push yourself through, crunching down into a streamlined squat until your arms are behind you. Performed correctly, this action provides rapid acceleration while giving your leg muscles a rest, with the thrust coming from your core.

Exercises that improve abdominal strength – including sit-ups, crunches, leg flutters and planking – all help with double-poling. This is also where my roller-skis come in. Double-poling is the only classic cross-country technique you can really practise on wheels, and I know that if I build up some endurance, it

might get me out of jail on race day – so I brave the sniggers and sarcastic comments from the blue-rinse brigade and hit the seafront esplanade several times a week.

CROSS TRAINING

While I’m clearly going to be behind roughly 16,999 of my fellow racers in terms of technique, I’m hoping I can make up ground with reasonable aerobic fitness and some experience in endurance events.

The best cross-training you can do for cross-country skiing is long-distance trail running. The muscle groups used, fitness levels required and the mental ability to go the distance while constantly reading the undulations of the off-camber terrain are all very similar. The Birkebeinerrennet course goes uphill for the first 20km, and this is where good leg strength will be imperative.

One of Britain’s top cross-country racers, Andrew Young, tells me that elite skiers should be trail running 30 hours a month during summer, and punching out 3,000 metres in under 9 minutes. They also seek out the steepest and muddiest terrain to train on, for better returns.

At last, I’m on familiar ground. Trail running is what I do, mud is my element, and there’s no shortage of testing trails in the Southwest. As the race approaches, I up my mileage and hope this might be my saving grace.



BEAT THE BURN

While it's important to train hard for the uphills, the descents can be surprisingly fatiguing when you are not used to assuming the downhill position (a streamlined crouch, with your knees bent and your head low), for extended periods. The last 8km of the Birken course is all downhill, and I know I'm going to be feeling the burn big time by then. The best exercise for this, unsurprisingly, is squats. You don't necessarily need to use weights, just do plenty of reps and holds.

POLE POSITION

To glide correctly, you must perfect your arm swing and pole placement. To help with cadence, forward propulsion and balance, your arms need to swing forward (off-set to your legs) as though you're doing an over-exaggerated military march.

Although your forward arm is outstretched, your pole should point backwards slightly, so it makes contact with the ground close to your feet, where you can get proper purchase. It's essential to complete the full arc of the arm swing, letting the pole go out behind you, and it's important to keep your arm virtually straight, so that you're using your core muscles to push yourself along (otherwise your arms will very quickly tire). Strangely enough, this is similar (in its science, at least) to proper kayaking technique.

COMPLETE BOUNDER

To bring it all together – foot technique, arm movement, pole positioning and fitness training – JF sets me one last bit of homework: ski striding and ski bounding. These exercises are done on grassy slopes, and they're the best way to practise your cross-country technique on dry land.

First, you need to learn to fall uphill, without over extending your advancing leg. So, instead of striding, you take small steps up the hill, landing on your front foot (a common technique in trail running too). Then, you preload a bounce into your step, mimicking the kick you would use if you were on snow. Get your arm swing happening, and when that's all coming together, add poles to the equation, and really attack the climb. Repeatedly.

I quickly discover that Devon is made for ski bounding. There are steep hills everywhere, covered in lush grass – perfect for practising this technique. Better still, the grannies don't venture up this high, so it's only the quizzical looks I get from early morning dog walkers that I have to endure as I bound up the slopes, swinging my poles like a demented four-legged spider.

But will all my bouncing and blushing be enough come race day? Only time will tell.

■ Find out how Pat gets on in the Birkebeinerrennet next issue...



EXPERT OPINION

Andrew Young, from the Great Britain Nordic Ski Team, imparts some tips

and tricks for snow-less cross-country ski training

■ Roller-skiing is a great technique-specific workout.

■ I spend a lot of time doing balance drills. Stand on one foot and try closing your eyes for 10 seconds, or do small knee bends.

■ We do lot of upper-body work in the gym. Pull-ups and triceps dips are perfect for skiers. For legs, try single-leg squats and lunges to challenge your balance and build strength.

■ I spend about 1-hour a week concentrating on my core muscles, doing everything from planks to v-sits, back raises, sit-ups, roll-outs and Pilates exercises.

■ Running is essential training during the off-season. We avoid tarmac, and instead run long distance (3–5 hours) on soft trails.

■ Hill reps and uphill running intervals are excellent for testing your motor and pushing your limits. One of my favourites is 6x6 minutes, but if you don't have a hill that long you can try shorter intervals (6x4, 4x4, 5x5, 10x2, 10x1 etc).

10 CrossFit workouts

from pro sailor James Wierzbowski

Sailing is a sport that requires you to be both strong and athletic. And for 23-year-old Olympic hopeful and Extreme Sailing Series mainsail trimmer, James Wierzbowski, CrossFit® training is the perfect way to stay in top form. Whether you're a sailor, rugby player, obstacle course racer, climber or simply want to stay fit, James' favourite workouts of the day (WODs) will get you fit for everything.



"ANGIE" – A GREAT BODYWEIGHT WORKOUT

"Angie is 100 pull-ups, 100 push-ups, 100 sit-ups and 100 squats. It's a high reps bodyweight workout lasting anything from 15 to 30 minutes. But generally if you're under 20 minutes, you're doing quite well. This workout is one I really like in terms of my power to weight ratio – I just love the bodyweight movement. Obviously there's a lot of hard, physical work to do on the boat, and if you can't move your own bodyweight well, then you can't run from one side of the tramp to the other smoothly and efficiently, then you're not much use. You've got to be able to balance on the trampoline and do heavy grinding, while the platform is lifting and the boat is hitting waves."

TOP TIP: *Although it's high reps, one movement sort of merges into the next. It really depends how your body works, because I can do 100 pull-ups faster than I can do 100 push-ups, which might seem odd. But it means by going a little slower on the pull-ups, I can get through the push-ups easier. Once you get to the sit-ups and squats, the hard work's done. So just fire through those.*

"GRACE" – A REALLY HEAVY, FAST WORKOUT

"Grace is 30 clean and jerks as fast as you can. And that's it. It's quite a quick movement, and pretty heavy – 61kgs for guys and 43kgs for girls. But that's the right weight for most people to get through it pretty quickly. I think the world record is about a minute. I'm around sub four minutes, but on my first time I took about 10 or 11 minutes. It's great for building muscle memory, and is going to help anyone who does a sport involving one simple movement with similar muscles, like cross-country skiing, trail running or anything heavy and dominant with a repetitive movement. I find Grace simulates moments on the racecourse where we have short and intense periods of heavy movements. It's heavy enough to give you serious oxygen deficit, but not too heavy that you need loads of rest."

TOP TIP: *Unlike the other workouts where your technique is super critical, with this one, you can just grunt it out. Of course you have to keep your body safe and your form good, but when you're in the last 10 reps, you're just doing anything you can to get that bar to your shoulders and over your head.*



"KAREN" – THE RELENTLESS ONE

"150 wall ball shots and that's it. This is a love-hate workout for me. I love it, cause it hurts so much, but I suck at it. If you can do 150 wall balls straight, then you're doing really well. It's a very awkward and difficult movement and it's so relentless. It's just you, the ball and the target. So you've just got to keep going. We always say you've got to train what you suck at. So if you're not good at something, you should always work harder at that. This workout's really good for your legs. A lot of the time in sailing, we have to sit in the half squat position, or move awkwardly with our bodyweight, up and down. So just having good endurance in your legs is really key."

TOP TIP: *Make sure you're comfortable with the weight of the wall ball and the stance with your feet. And if you can get the ball onto your chest on the way down, it'll help a lot and stop you burning out your shoulders.*

"DIANE" – HEAVY, TECHNICAL AND GYMNASTIC

"So Diane is 21, 15 & 9. Anytime those numbers come up, you know you're going hard and fast. This one involves quite heavy deadlifts at about 102kgs (70kgs for women) and handstand push-ups and can last anywhere between three and 15 minutes. The deadlift is a very simple, heavy movement, while the handstand push-ups (usually done against a wall) are also heavy, but quite technical. Just having good balance and being strong in quite an unfamiliar position is handy. You'd be surprised how useful it can be getting good at being upside down. In sailing, the

lower back is always under a lot of fatigue, so having good core muscles and being able to switch your glutes on is really important. And the deadlift is a really good movement for improving lower back strength."

TOP TIP: *Try to fire through the deadlifts, because you don't use many of the same muscles in the second exercise. Then focus on your technique with the handstand push-ups. Get a good kick up, keep your chin tucked in and just get through them as quickly as you can.*

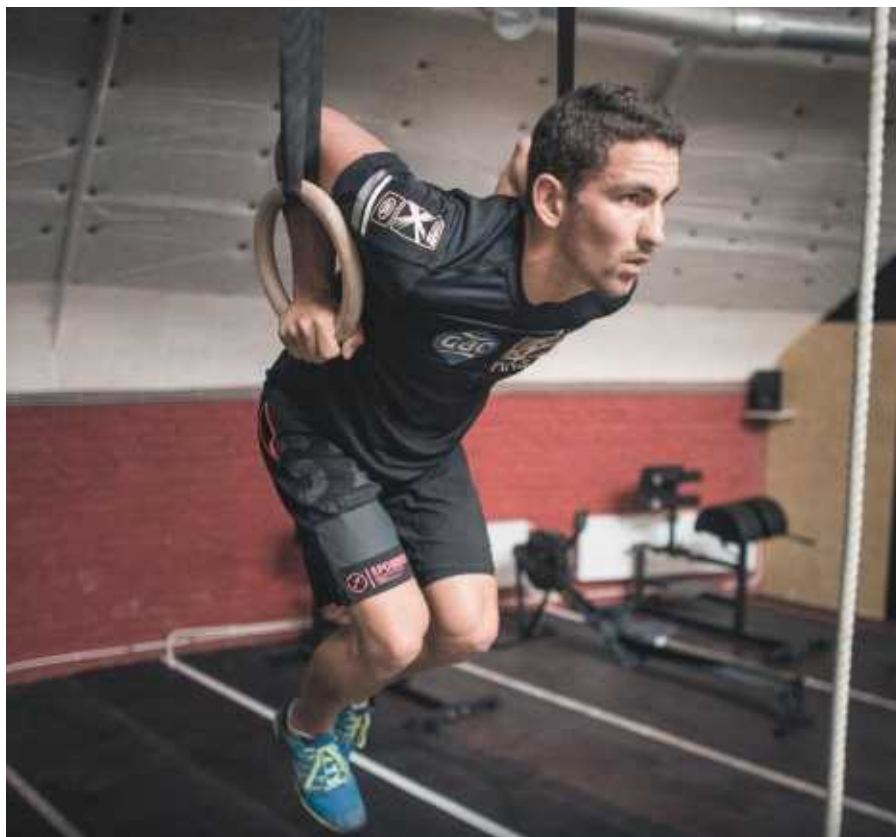


"ANNIE" – DON'T TRIP UP

"The reps on this one are 50, 40, 30, 20 & 10 of double-unders (skipping) and sit-ups. This one lasts like five to 10 minutes. It's often a good warm-up workout, cause it's really light and quick, but takes some technical skill. I like the matching of a highly skilled movement with something that's super easy like sit-ups, that you can just fire through. The skipping's great for sailing, as it takes a lot of body control. It's all about replicating one movement exactly the same each time, so as you jump, keeping your body nice and still. The timing of the rope is also crucial to making sure you don't trip. It really requires your whole body to be switched on. It's super important to keep your mind sharp and improve your technique. Technique is everything."

TOP TIP: *The double-unders are real easy to stuff up, as they're quite technical, and so being able to get through them unbroken and not tripping on the rope is key to getting a good time.*





"AMANDA" – HEAVY AND TECHNICAL

"So Amanda is a combination of muscle-ups and snatches with reps of 9, 7 & 5. For the snatches, the barbells are set at 61kgs for guys and 43kgs for girls, so it's pretty heavy and can take anywhere from 10 to 15 minutes or more for some. It's not even so much about the time, but if you can get all the muscle-ups done unbroken and you can touch and go on all the lifts, you're doing really well. I just like that both movements are really heavy, incredibly hard and highly technical. In sailing you've got to have good technique and this workout is great for focusing on that. It's

short and fast, but it's not something you can muscle your way through. If your technique starts going bad, the whole workout falls apart. It's quite hard to find a workout where your technique has to stay so clean at such a high intensity."

TOP TIP: *You just need to make sure every rep counts. If you don't make it into the rings or you don't make the lift on the snatch, then it's a lot of wasted energy. So really take your time in the set up of your technique, making sure you're safe for both movements.*



"MURPH" – A GOOD MENTAL GRIND

"This one's famous for being the hardest workout. Basically, you run a mile, do 100 pull-ups, 200 push-ups, 300 squats and then you run another mile. For me, Murph is definitely the hardest, most dreaded workout, but that's why I love it. It's a good mental grind, but you just need to keep chipping away. While Fran's really short and fast, this is a 30-minute to one-hour sort of workout. It's great training for staying focused throughout the routine – something that's really important in one of our 30- or 40-minute Olympic races. A lot of what I say is about your mental state whilst doing physical work. In sailing, you can work as hard as you like, but if you go the wrong way or you're not going fast, then you've got no hope. You've got to be more mentally smart than physical, but they do go hand in hand."

"LYNNE" – MAX IT OUT

"Lynne's a good workout, because it doesn't discriminate. The workout has five rounds and involves bench pressing your bodyweight. It's not a usual CrossFit movement, but we do it in our strength training a bit. So you do your max bench presses, then your max pull-ups, and repeat another four times. This one isn't really for time, it's purely trying to hit as many reps as you can; but try not rest too much. I love it, because it doesn't matter how big or small you are, the weight is accounted for by your bodyweight. The bench press really builds strength and power, which is great for some of the heavy movements on the boat, like pulling the gennaker sail up. It's quite a tough movement, so it's just good to be able to bench press more and more weight."

TOP TIP: *Lynne is a WOD that will definitely reveal any lack in strength. It's hard to hide behind good technique or strategy in this one, so just go for it!*

"KING KONG" – THE INSANELY HEAVY ONE

"This is a really heavy workout. Most people find it too much to do as it's written. It's basically one deadlift at 206kgs (145kgs for women), two muscle-ups, three squat cleans at 113kgs (79kgs for women) and then four handstand push-ups. Three rounds of that. It might not sound like much, but it's insanely heavy. I can't even get through King Kong at the moment, but I like that it's probably the heaviest WOD there is. It's a great strength builder, so it's good for anything on a boat that's really heavy."

TOP TIP: *You've just got to take your time and make sure you get each lift. You'll need a fair bit of rest, because it's so heavy. If you're doing it for the first time, don't even worry about the time. Just try get to the end of it, then work from there.*

"FRAN" – A FAST-PACED FULL-BODY WORKOUT

"Fran is a combination of thrusters and pull-ups with reps of 21, 15 & 9. It's a super-quick but intense full-body workout – I think the world record is about two minutes. I love it, cause it just hurts like nothing else. So it's an amazing feeling when you finish in a good time. Fran replicates the racing we do really well, because we're under a lot of physical stress and are working at a high heart rate, but we've still got to think clearly. Yesterday, for example, we did 10 races that lasted less than 10 minutes. And with this workout, you're only on the red line for a few minutes."

TOP TIP: *People are normally better at one of the exercises. So whichever one you're not so good at, just slow down and pace it. If you don't, you can blow up too early and crash. Just add a little break in the first and second round, then try and hold a steady pace to the end.*

For more inspiration follow James on Instagram @thesailorslife



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Runner's MOT

A visit to the Accelerate Performance Centre, for a fitness test and technique analysis, led to some startling findings for Damian Hall – and an MOT fail.

MY RECENT RUNNING results included some PBs and podium placings. But my performances seemed to indicate I was starting to plateau and I had spent more time than ever injured.

Running more miles was simply leading to more physio appointments. I needed fresh, expert input and the best place to get that is from whoever is the best. Mo Farah was too busy arguing with people on Twitter, so I approached Marcus Scotney.

Marcus has represented England and Great Britain at ultramarathon championships, won five ultra races in 2014 (setting four course records) and has a marathon PB of 2:32. He's also a sports therapist and part of the experienced coaching team at Sheffield's Accelerate Performance Centre. Plus he has a brilliant beard.

After an initial consultation on Skype, he suggested I come to Sheffield for a "running fitness zero assessment" and a look at my technique – a runner's MOT if you will – before providing a training plan for my year's A-races. The visit was a revelation.

PUTTING SOME HEART INTO IT

Accelerate's philosophy is to train with a heart rate monitor (HRM). They believe that's the most accurate way to know how hard your body is really working – otherwise it's guesswork based on numerous factors, such as terrain, fatigue, weather and other variables.

I had never used a HRM before because it seemed too scientific, too serious, and a bit like wearing a bra. Would it take the joy out of running? Well, injury was already taking the joy out of my running, so I was ready to try new things. It also occurred to me that amongst all my running friends, the only one who uses a

HRM happens to have represented her country.

To determine what heart rate levels to train at, I needed to do a lactate threshold test. The test shows when the body stops using lactate as a fuel efficiently and it starts to flood the blood stream – at this point your lactate or anaerobic threshold is reached.

The test involves running on a treadmill for three-minute intervals, the speed increasing by 1kmph each time. It was easy at first but got considerably sweatier and by the end I was banging into the sides and struggling to stay on the treadmill. A surprisingly painless blood sample was regularly taken from my ear lobe to see how much lactate was in my red stuff. Podiatrist and technique specialist Colin Papworth filmed me at different speeds and tiredness levels.

As Marcus pored over figures and created a lactate graph, naturally I assumed he would voice admiration at my bull-strength heart and stamina akin to an Arabian thoroughbred. "Yep, there's plenty of room for improvement there," he said. Oh...

"Your energy efficiency could be better," he continued. "We need to get you a better running economy – the body's ability to utilise energy – both glycogen and fat. You're overproducing lactic acid, because you're inefficient." Just like my car, I'd failed my MOT.

My "top end" speed could be improved (which I'd expected), but so could the bottom end – and my ability to burn fat. I had been running too much at medium speeds. "A common mistake," he said. "There's this obsession with miles per week and minute-per-mile-speeds. But it's brutalised training, forcing the body to do more than it's capable of, leading to over-training and injury. By running hard, after a short-term gain over perhaps four months, all we do is burn glycogen and then plateau or get injured." Which is pretty much what was happening to me.

GO SLOWER TO RUN FASTER

"Your muscles and heart need to be strong and your energy systems need to be taught how to work properly, and that takes time and care," said Marcus. To my surprise, amongst other things, I'm prescribed with lots of slow running, at a really easy heart rate.

"Slow work gives you a long-term gain as it builds up the foundations. Most clients come to me to run faster," he continues. "I tell them to run slower. They're usually reluctant, but they always get faster because of it. Almost everyone could benefit from running more slowly. This aids more capillary – i.e. more oxygen creation – growth and more mitochondria, which are like building mini power stations. When you run fast, you're destroying muscle capillaries." I'm given a training programme that doesn't even mention miles. Instead it's all HR zones and hours on feet.

Words Damian Hall Pictures Accelerate Performance Centre, Laurence Crossman-Emms





QUICK TECHNIQUE TIPS

Stand tall, look forward, relax shoulders, get arms pumping backwards – imagine they end at the elbows. Kick backwards to allow full stretch of legs and engage glutes and hamstrings. Don't stress about what part of the foot is hitting the floor – although the forefoot is ideal. Do make sure you're not overstriding – that's when the foot hits the floor ahead of the knee which is ahead of the hip.

Colin's keen to emphasis that small changes to the right bit of gait can lead to big improvements.

LET'S GET TECHNICAL

While I was at the "garage", it made sense to get a full service too, and I sit down with Colin for technique analysis. Watching slow-mo video of myself running is both dismaying and illuminating. I thought I ran like Steve Cram. I'm more like Seasick Steve. Colin delivers my second dose of bad news in a kindly, avuncular way.

My bad habits include the dreaded overstriding. I'm also overloading my calves (indeed they've been sore for most of the past year), meaning I'm missing out my hamstrings and glutes – far bigger muscles that aid stability and provide power. My unstable posture forces my body to compensate elsewhere – my torso slightly rotates, which is energy wasted. My left arm swings out further than my right – Colin and Marcus detect a problem in my right ankle. A quick if ouchy bit of manipulation and some tape sorts that out. While a resistance strength test confirms my under-used hamstrings are indeed feeble.

"For muscles to work efficiently they need to go through their full range," explains Colin. The body is full of connective elastic tissue and if we stretch them properly we get a natural energy return. "Various things can block this – shoes, joint restrictions, poor technique, for example, and this leads to the muscles working in a short range – always contracting and not being able to lengthen. Muscles don't like to keep contracting and eventually they go 'blow this' and just lock up and get damaged."

We're not starting from scratch, thankfully. Colin's keen to emphasis that small changes to the right bit of gait can lead to big improvements. "If you stand taller and stretch out properly, the energy is used for forward momentum," says Colin. "When it works, the results are amazing – some call it free speed. Get the upper body sorted out and the rest should fall into place." In my case, Colin also suggests I need to put a bit of a kick in my stride to allow my leg muscles their full reach.

I'm also wearing the wrong shoes, he says. "A lot of running shops fear pronation – the heel rolling inwards – and they'll sell you a shoe that prevents pronation. But biomechanically it's essential, for shock absorption."

We get on the treadmill and work on my technique, while trying on various shoes – with less "blockiness" and no anti-pronation. The different treadmill noises, different shoes – and slight technique tweaks – make it amazing. It's the quieter the better.

It's too soon to know if training with a HRM, running slower, new shoes and technique tweaks will work for me. But the theory seems sound and I can't wait to find out. I leave Accelerate with my head buzzing with fresh ideas and renewed appetite for training...

■ **Sheffield's Accelerate Performance Centre** (accelerateuk.com) offers a wide range of services for runners, from coaching and technique workshops to physiotherapy and a lot of appealing shoes and kit.



MOT FAILS

- 1 Inefficient running economy.
- 2 Too much running at medium pace, leading to a plateau.
- 3 Chasing arbitrary mileage targets.
- 4 Weak hamstrings.
- 5 Form overloads calves and needs various tweaks.
- 6 Bad shoes are hindering technique.

MOT FIXES

- 1 Train with a HRM to improve efficiency.
- 2 Train at slower and faster speeds in specific HR zones.
- 3 Aim for hours on feet not miles, to build up slowly.
- 4 Hill work – to increase hamstring strength.
- 5 Concentrate on technique – including prescribed drills and strength drills (e.g. stair steps, static squats, forward lunges, arm pull backs, prisoner squats).
- 6 Got new shoes that suit my gait.

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Canine Companion

Running with your dog is a great way to bond with (wo)man's best friend. It helps to exercise your pet, and provides extra security, particularly if your dog is protective of you. Nicola Davies investigates what training is required, how you can get your dog up to your pace, and what equipment you should take with you.

DOG BREEDS AND RUNNING

Your pace and distance will determine the most suitable dog breed to accompany you. For example, medium-build dogs with strong hindquarters, like Weimaraners and Jack Russell Terriers, are best suited for long, steady runs of ten miles or more. Lean dogs like Greyhounds are the best companions for faster, shorter runs. Some of the more heavily built breeds, like Labradors, have plenty of stamina, but can't keep up a rapid pace, preferring a slow jog-trot. This said, there have been Labs who can run as many as 25 miles at a time, as long as they have access to water along the way.

Obviously, some dogs, such as Dachshunds, Great Danes, Bulldogs and Pugs, will never have the same amount of endurance as dogs that were bred to be able to cover long distances in one go. Certainly, pet owners who would like to run with their dogs need to be alert to their dogs' needs and be ready to slack off when they show signs of tiring.

The weather also plays an important role. Although Huskies are great endurance runners in cold conditions, they don't tolerate heat well, while Rhodesian Ridgebacks thrive on hot-weather runs. Distance runner Chris Vargo regularly takes his dog along for 20-mile runs, but leaves him at home when the temperature exceeds 30 degrees.

KNOW WHEN YOUR DOG SHOULDN'T RUN

Dog obedience expert, Shirley Holmes, says that the way your dog runs will tell you when they are beginning to tire and has had enough. "Your dog should run next to you with the leash slack," she says. "If they start lagging behind and look winded rather than just panting in a healthy way, you need to slow down." Apart from panting heavily and lagging behind, an overtired dog tends to lower their tail and ears. Dogs are generally keen to please their owners, so by the time they show signs of tiring, they really are exhausted and aren't just "fooling around". Pushing them harder could cause injury or even death.

Holmes cautions that older dogs, or dogs who have suffered back or leg injuries in the past, should be examined by a vet before risking long runs. However, dogs that are simply unfit can get fitter over time. She suggests starting them off with a one to three mile route and increasing the distance by around 10% from week to week. "Once they look comfortable with the distance, you can extend it. Most of the dogs I see are overweight and don't get enough exercise."

Young pups also shouldn't be required to run very long distances. Veterinarian Daleen Erasmus says that 18 months old is a good age to start, but warns that certain larger breeds may need to be 24 months old before they can



"Our canine companions generally want to please, so any signs of physical distress should be taken seriously."

be pushed hard without the risk of skeletal damage. "There's nothing wrong with taking a pup on a light run," she adds, "in fact, it's good for them, but by a 'light run' I mean a jog around the park."

OBEDIENCE

Since you will be meeting other runners and other dogs on your route, socialisation is extremely important. The younger a dog is when socialisation training takes place, the easier it is to teach your pet to get on well with other dogs and people.

"You don't want your dog suddenly yanking at the leash while you're running," says fitness enthusiast, Jacques Hugo, an eager runner who enjoys taking his Belgian Shepherd, Hamish, along on his daily jogs. "Hamish used to suddenly pull on the leash on seeing other dogs, and he's had me off my feet once or twice when he suddenly jerks on the leash mid-stride. The last thing you want is your dog getting loose and a dog-fight on your hands."

Holmes agrees that leash training is an important first step and warns against letting a dog run off the leash, especially in high-traffic areas. "Even the best-behaved dogs can lose their heads at times, and a single lapse could result in your dog getting run over. Basic obedience to voice commands like 'come and 'heel' is a must, but the leash should stay firmly on, at least until you reach a park or other quiet area." She also remarks that it is vital that people should respect wildlife: "It's just not fair on the wildlife if you're going to let your dog hunt," she says.

Hugo comments that obedience training made all the difference to Hamish, who used to react aggressively to other dogs. "Going to training and spending time with other dogs was helpful, and he doesn't lose his head so easily and

ignore commands. If he's pulling on the leash, I can easily get him back to heel. He's getting quite snobbish about noticing other dogs at all these days."

Once again, the earlier training begins, the easier it is for your dog to master the skills of basic obedience, but the breed of dog also affects just how well the lessons stick. Hugo emphasises the difference between different breeds in this respect. "My Airedale, Snips, was fairly well-behaved, but there were still times when she'd completely lose the plot because other things around her were more exciting. I think most terriers are a bit like that. As a Shepherd, Hamish is much more reliable. He sees running as his 'job,' and he is a working dog."

CHOOSING THE RIGHT...

Leash most serious runners prefer a waist strap leash that they don't have to hold onto. There are several designs, ranging from the basic to waist straps with extra compartments for storing doggie accessories. Leashes should be fairly short, allowing your dog to stay close and well-controlled.

Choke chains are popular since they don't constrict the dog's breathing unless he or she begins to pull. When using a traditional collar and lead, pet owners should ensure that they can easily slip two fingers between the collar and the neck. However, you should remember that dogs with tapering heads, like Dobermans and German Shepherds, easily learn to back out of the collar when they want to get free.

Harnesses that fit around the dog's body are particularly popular for smaller breeds; for dogs with breathing problems owing to pushed in faces; and for lightly built breeds such as Greyhounds.

HAVING FUN TOGETHER

Even if you've got a dog that's supposed to be a great runner owing to its particular breed, each dog is different. Be aware of your own dog's reactions and physical needs when running with you, and always keep it fun for the animal as well as for yourself. Our canine companions generally want to please us, so any signs of physical distress should be taken seriously.

Since taking your dog along on runs can be very new and exciting at first, runners should be patient and allow for a learning curve. Be firm with your dog, but remember to reward correct behaviour. "Hamish and I love our runs, but I'll admit that at first I wondered if he'd ever get over making sudden stops to sniff things," Hugo says. "Now that Hamish knows what's expected of him, we both love the experience of running together!"



WHAT TO TAKE

■ If you're covering longer distances (a 45-minute run or longer), and on shorter distances when the weather is hot, taking water along is important. It's possible to find travelling bowls that fold flat to pocket size. Plan your route to include a water point or take extra water along for your canine companion.

■ Taking some form of poop-scoop with you is good manners. Once again, there

are compact variants designed for runners.

■ If you want to do really extreme cross-country running with your dog, dog-booties can help to protect feet, but most dogs dislike them and won't wear them for long distances.

■ Doggie treats are a must if you want to reinforce good behaviour, especially early in your dog's running career.

"Running is simply an anti-depressant. My favourite feeling is after a hard session or a race, that complete and utter... exhaustion, tiredness, smugness."





In a rush

GB international Holly Rush talks marathons versus ultramarathons, sacking her coach (who's also her husband) and her penchant for pork pies.

Holly Rush has represented England and Great Britain for the marathon at the European Championships and Commonwealth Games, as well as the World Mountain Trail Championships. Since stepping up to ultramarathons, The Wiltshire-based sports massage therapist's success has continued, with race wins in Sweden and France, and another GB vest at 2015's 100K World Championships.

Damian Hall: Firstly Holly, are you obsessed with pork pies?

Holly Rush: Through experimenting I've found I can run at about an 8-minute-mile-pace, eat a pork pie and digest it. Any faster and it doesn't work. For mountain races and for hiking they're amazing! I guess it's primarily about the salts.

DH: What is it you love about running?

HR: Running is simply an anti-depressant. My favourite feeling is after a hard session or a race, that complete and utter... exhaustion, tiredness, smugness. I love that feeling of being tired. It's addictive. I've done other sports, but I've never found anything that gives me that same feeling. And running takes you to places you wouldn't otherwise see. I was in Rome on

holiday this year and I went running every morning. I saw loads more of the city than most people saw walking around all day. There are so many things about running I love. But above all, it's the feeling I get during and after, that I cannot replicate. Without it I feel incomplete.

DH: What are you like when you're injured?

HR: You'd have to ask my husband, Martin! It's s%&t when you can't do what you love. I've had five broken bones when I was road running and that's 8-12 weeks of no running each time. And it was always in the build-up to a key race. Martin once said to me: "Holly, running doesn't define you. You've got many more things in your life." And I thought, "Oh my god, I actually want to say, 'but it does'." But I also thought, "What a complete cow that I am that so focused and selfish about running." When I'm injured I'm not a nice person to be around. But I'm getting better at it. I take it out on cake! I used to go the gym and smash out the cross training, even though I hated it, now I go and walk the dog.

DH: What's been your best moment as a runner?

HR: The 2010 European Championships [in Barcelona, where Holly finished 18th in the



marathon and earned a team bronze]. It was 32 degrees and we wore ice jackets before the start. I had prepared well for the heat in Majorca. Standing on the podium in the Olympic Stadium was one of the proudest moments of my life. It was a brilliant. I was really pleased with how the race went. Also coming seventh at the Comrades Marathon, it being my first ultra, was very special. The experience was overwhelming.

DH: How did it all start for you?

HR: I went to watch the London Marathon when I was a student in London and I saw all these different shapes and sizes – you didn't have to be a super-athlete to run it. I literally had a burger in one hand a pint of Stella in the other, and I said, "I might do this next year". And everyone was like, "Yeah, whatever, she's a bit drunk." I signed up for a charity place. I did a 5K and the Bath Half as prep – in about 1:45, wearing Bath rugby shorts and socks. I then ran the marathon in around 3:50 in heavy rain. I had a lot of chafing, because again I was wearing completely inappropriate clothing. But I loved it.

DH: What happened next?

HR: I did the London Marathon again the year after, in about 3:15. I'd been doing more training and working part-time in a gym, to get a free membership, where I ran on a treadmill. After graduating I went into the sports industry, managing at health clubs and similar. When I moved back home near Bath to start a new job I joined a club and took it more seriously – this was about 10 years ago. I ran London again in

3:06 and wanted to try and get under three hours. I downloaded a training programme and ran the Berlin Marathon in 2:59. Someone said, "Why don't you get a coach?" So I met Martin, now my husband. Six months later I ran 2:48 at London, a time I never thought achievable.

DH: How exactly did coaching improve you?

HR: It was basically increasing my volume and introducing speed work and tempo runs. All introduced slowly. From there, every marathon I did I took two minutes off my PB, so 2:46, 2:44, 2:42... I think that was down to consistency of training. It's thought if you train consistently and properly it takes 6-10 years to become the best athlete you can be. It's a build-up of endurance. I got my 10K down from about 40 minutes to 34 minutes. My 5K time came down to 16:38. Most elite athletes don't move up towards marathons until they have a best possible 10K. I started the wrong way around, and I was comparatively old when I began, too.

Then, not wanting to, I ran five marathons in almost exactly the same time, around 2:37. And I started getting disillusioned. It p£@&d me off. I ran Houston without a watch. I came around the corner to the finish and the clock was on 2:37, with the seconds ticking, and I finished two seconds outside my PB. I wanted to run under 2:35. I know I can run that time. But maybe it's in my head. Maybe I'll go back and smash it...

DH: When did you start thinking about ultramarathons?

"My strength is that I'm just one big slow-twitch fibre. I can run pretty much all day at quite a reasonable pace, around six-minute miles."

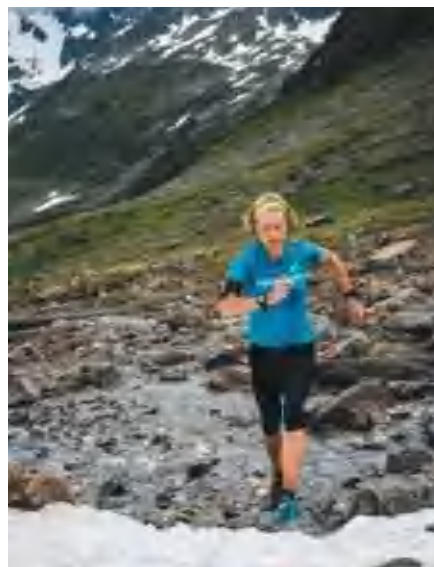
HR: One day I was running round a track, going round and round, doing the same old thing. I just stopped, took my shoes off and said, "I can't do this. It's getting on my nerves." It was p£@&\$g it down with rain and I was having a bad session. We all do. I heard about the Manaslu Trail Race in Nepal and I'd always wanted to go there. I just found myself booking a flight.

I ran the first day with [five-time UTMB winner] Lizzy Hawker. On the uphills and flats I was ahead of her, on the descents I was busting a gut to keep up with her. At the end of day one I thought, "This is not for me, I don't like running off-road." But as we got more and more into the Himalayas by the end of the week I was hooked, I loved it.

I loved the feeling of not having a watch on. I had been so obsessed about the times I was doing, heart rates, distances. All that was out the window. Ultra runners didn't know what I was on about when I mentioned threshold, track sessions and split times.

DH: And when you got back you sacked your coach, who was also your husband?

HR: It was the best thing we did actually. Living with your coach means you can't leave things



FIVE TIPS TO BECOMING AN ULTRA RUNNER

1 Leave your watch behind You might run 7-minute miles on the road, but when you get on trails that might be 15-minute miles because of the terrain. So try and forget all about hitting a certain pace. Just go and run.

2 Top speed Don't drop the speed work. You don't need much really high-intensity stuff, but fartlek, tempo and threshold work are all good. For a threshold session, try 20 minutes at threshold, plus 5/4/3/2/1mins, getting faster each time, with half of each time as recovery. Other good ones are 4x15mins; and 1min on 1min off.

3 Fast and long Too many people do their long runs too slowly. Unless it's a social run, you need to do some longer runs at a harder pace. Try 5x1mile or 10x1min efforts, to burn all that glycogen off, then do an hour at a steady pace.

4 Get fat adapted Practise fat adaption by running fasted, before breakfast. As soon as you eat anything that will become your fuel. But you are always fasted in the morning.

5 Find your food Nutrition is so individual. People get stuck on faddy stuff. Just because X person does Paleo, don't just follow that. Experiment and find your own path.

separately – we had after all met as coach and athlete. I didn't always feel I had the support of my husband, because he was still my coach, even though he tried not to be and he did really well. But it was becoming too focused and I just wanted to step away from it. We had started to resent each other. I was also getting very disrespectful in training. As soon as Martin and I went our separate ways in that side of things, it was so much better. He did find it hard though, that I was stepping away from his training and doing something completely different – with Alan Story, Mo Farah's former coach.

DH: How has your training changed?

HR: The volume has stayed about the same. I would do three hard weeks (80-110 miles) and one recovery, as well as high intensity track work every week. But I haven't been on the track since. My long run wouldn't have been longer than two and a half hours, but now most of my sessions are two hours, maybe 25K. Last Sunday I ran 50K in 3:45. I never get the same session. Normally I have no idea what training I'm doing tomorrow. Alan's very hot on communication. He can tell just from the way I talk how I'm feeling. It's quite hard to organise your day sometimes, but the whole idea is that you're not worrying about it. An easy day for me might be two 45-minute runs, or 2x 1-hour, then a speed session the next day. I take a day off when I need a day off, once in two months, or once a week. And I do a little strength and conditioning, 10 minutes at a time, very specific stuff.

DH: Was Comrades Marathon, where you placed 7th, as great as it sounds?

HR: I didn't really have any expectations. I'd run lots of big city marathons, but this is something else. It starts at 5am and I couldn't believe that the streets were lined with people having barbecues. In the townships you have people running alongside you. Men cocoon you, push you along and help you.

DH: What do you get from ultra running that road running didn't give you?

HR: You meet such cool people. Ultra and trail runners are way more open and friendly than road runners. They are more encouraging and genuinely want each other to do well. In road running it's more dog eat dog.

I love the travel, too. In road running you're going to cities. With ultra running I've been to some really cool places, such as the Himalayas.

The training culture, too, plays to my strengths also. It's less intensive. I ran [and won] the Montagn Hard 60K in the Alps in 2014. It was just ridiculous. Such a stupidly tough race. The feeling from the ups and downs I got, and the scenery, will always stick in my mind. In contrast, I did London Marathon again two years ago, as training for Comrades, and I found the crowds quite irritating and monotonous, when I hadn't done before.

DH: Have you given up on marathons now?

HR: I'd still love to go back and run a fast marathon. But it would only feel like a success

if I got under 2:35.

DH: What are your strengths and weaknesses as a runner?

HR: My strength is that I'm just one big slow-twitch fibre. I can run pretty much all day at quite a reasonable pace, around six-minute miles. That was the problem with my marathon running. I could have kept running at that pace for longer, but I was trying to run faster and that wasn't my thing.

My weakness is definitely technical terrain. I've got better, but I'll never be brilliant, at descending especially. And navigation, too. I'm always getting lost.

DH: How much attention do you pay to your nutrition?

HR: I like to eat as naturally as possible. I avoid processed foods and never drink fizzy or sports drinks. I work closely with my friend, registered dietitian, sports nutritionist, *Outdoor Fitness* contributor and author of *Training Food*, Renee McGregor to plan my nutrition. My diet leans towards high-fat low-carb. Well mostly, but I do love bread! I periodise too. If I have a high-intensity session I fuel predominantly on carbs, whereas before long runs I eat mainly fat/protein. I eat a lot of eggs, avocados, nuts, yoghurt, pork pies. During ultras I fuel on pork pies, Chia Charge Flapjacks, gels and Shot Bloks. My favourite pre-race breakfast is toast, almond butter, a banana and coffee. Post race I drink milk and usually reward myself with a pie and a pint of ale.

10 ways to Max your Tri Training

British triathlete Vicky Holland reveals her top 10 tips for eking out the maximum gains in the minimum time, so work, weather and fading daylight hours never hamper your fight for fitness.

WITH THREE DISCIPLINES to juggle, even professional triathletes soon discover that time can be their toughest adversary – especially when the harsh British winter closes in. To help you stay on track, Leeds-based triathlete Vicky Holland - who represented Great Britain at London 2012, earned an individual bronze medal at the 2014 Commonwealth Games (plus gold in the mixed triathlon team relay for England, to add to her world relay titles for Great Britain in 2012 and 2014); and won the Cape Town edition of the 2015 ITU World Triathlon Series in April - reveals 10 ways to optimise your triathlon training time.

Words mark Bailey Pictures British Triathlon



01 IT'S TIME TO GET ORGANISED

"The biggest thing as we head towards winter is to be more conscious of your time: you get limited daylight hours so scheduling your day is really important. If you stick to a weekly routine it will ensure you don't miss key training sessions and you don't lose any balance between your swim, cycle and run training. You don't want to cram your sessions into one or two days, just because the weather might be better, because it is harder to refuel and recover and you will get tired. I normally swim in the morning, cycle in the middle of the day and run later on. Figure out your own schedule based on your work and lifestyle."

02 BOLT ON MORE BRICK SESSIONS

"For amateur athletes who have to manage training sessions around job commitments, brick sessions are a fantastic way to get great gains when you don't have much time. Throughout the summer we do a hard bike-run session and some people do a swim-bike session too. If you have an hour in the evening, try mixing up a high-intensity bike session with a short, hard run. It's a really high-quality session and it doesn't need to last more than an hour or an hour and a half."



03 FOCUS ON YOUR SWIM TECHNIQUE

"The best way to make progress in relatively little time is to focus on your swimming. A lot of people have not done any technical training since they were kids and you can make massive gains by getting input from swim coaches or by joining a swim club. A lot of training venues have "endless pools" (small, self-contained training pools in which you swim against a current), so you can have your technique monitored by video analysis. It's not just for professionals any more. A good swim technique will really improve your performance in a short space of time."

04 TEAM UP WITH A CHAIN GANG

"As a professional triathlete I am lucky enough to cycle 16 hours a week over winter but once a week we also do a chain gang and it's a really good way to train if you're short of time. Most local clubs have some form of chain gang: you meet later in the day, about 6.30pm, so it's after work, and you put in a good hour of training in a group. It will improve your fitness because you are working hard in a group – normally in a 'through and off' sequence, with everyone taking turns at the front – but you will also improve your bike-handling skills so you get a really high-quality training session and technical gains too."

05 HIT THE HILLS FOR VERTICAL GAINS

"Hill reps on the bike are a really good way to improve your strength and fitness without taking up too much time. Try to mix them up. They can be longer hill reps of 8-10 minutes to build strength and an economical technique, shorter reps of 3-4 minutes to build power, or intense 1-minute intervals for explosive power and speed."

Hill reps on the bike are a really good way to improve your strength and fitness

06 PUMP UP YOUR PACE WITH PLYOMETRICS

"For most age-group athletes a good way to quickly improve your running performance is to do plyometric work. You can start with just bouncing on the spot, trying to keep your knees relatively straight as you do so. Then you can progress to bounding and hopping, focusing on using the elasticity of your tendons as opposed to your calves and feet. These plyometric drills help initiate the correct motor processes for good technique when you run and increase your stride length."



07 SPEED UP WITH INTERVALS

"When you're running, make the most of whatever time you have by doing intervals. I tend to do hard sessions in the morning or the evening so I mix it up a bit. Even on a short run if you do interval efforts of 4 minutes, 3 minutes, 2 minutes and 1-minute, with a short recovery in between each effort, it's a really good quality session."

Make the most of whatever time you have by doing intervals

08 GALVANISE YOUR BODY AGAINST INJURY

"Every triathlete knows that if you start getting injured you lose even more training time. I do two structured sessions in the gym every week and the main aim is injury-prevention. A lot of it is about glute activation to prevent lower-limb injury. A glute circuit might be four minutes of clam holds and cycling crunches. You can introduce a Theraband to make it harder. Core exercises are also important: V-sits, Swiss ball holds and side planks will all help to keep your core strong so you can maintain good form."

09 NEVER RUN OUT OF FUEL

"If you are short on training time you need to make the most of each session - and that means eating well. The night before I train I will have maybe risotto, spaghetti Bolognese, chilli, jacket potatoes, or fajitas - I might even go wild and make a pie. Make sure you are always getting enough fuel for your training so you can go out hard."

10 HAVE FUN WITH FRIENDS

"If you're going to train when maybe the weather isn't so good, you have to enjoy it. I like to train in a group and we often go for bike rides to a coffee shop in the Dales where I enjoy a flapjack, a scone or a cake. If you keep your training fun with friends you will find it easier to get out and give it your best."

I like to train in a group and we often go for bike rides to a coffee shop

■ Vicky Holland was speaking ahead of the Vitality World Triathlon London in Hyde Park. In 2016 the ITU World Triathlon UK event will come to Leeds. Amateur triathletes can compete on the same course as the elite competitors. Register your interest at, britishtriathlon.org/leeds

We have a new training diary candidate this month, who's a bit secret squirrel or rather secret ironman! Ian Shutt joins regular Neil Spencer whose challenge nears.

Secret Ironman

Ian Shutt's wife is concerned for his survival as he prepares to tackle the Lakesman...



IAN SHUTT, 36 is an accountant who's aiming for the Lakesman in June 2016

I want to be an ironman – a secret ironman??? I want a huge surge of satisfaction when I amuse the crowd by ironically dipping over the finishing line. I want the nods of approval from my peers when I deftly slip my achievement into conversation before swiftly moving onto a different topic. I want the tattoo! Over the next few issues I'll be sharing my journey from slightly overweight 36-year-old unfit wannabe to self-proclaimed "legend of long distance events"! My chosen event is The Lakesman (thelakesman.com), to be held in the beautiful Lake District in June 2016.

The Lakesman is the first time there's been a long distance triathlon held in the Lake District. Based out of Keswick it features a swim of 2.4 miles in Derwentwater, a 112-mile cycle, taking in the west coast of Cumbria and then a 4 lap run marathon run.

So what's my level of fitness? I'm considering my current training as my base phase before concentrating on the specifics in a couple of months' time. My commute to work - if I cycle - is a reasonably flat 10 miles each way, so I'm doing that once or twice a week when conditions and commitments allow. On a Sunday I try and do a longer ride taking in a few more hills, although these are still not much further than 30 miles.

The run is my biggest fear. I've completed four marathons, although none for a few years now. My time increased for each, so I'm expecting this to be the one big area where I'm going to have to dig deep. I've told myself that if I can do a decent half marathon then have to walk, that'll be fine. If I do this, I'll still make the cut-off time of 17.5 hours, but if I can run it all the way that will definitely add to

the sense of achievement.

I've never been a strong swimmer but I completed two open water swims recently, a 1-mile and a 3.8km – twice as far as I've ever swum before – and to be honest really enjoyed them! Straight away it gave me the confidence that come next June I'll have no problems with completing the swim in the permitted 2 hours 20 minutes. Lesson number one though was technique. When I swam breaststroke my right knee became sore, and when I swam front crawl my left shoulder was so heavy that by the end I'm surprised I wasn't going around in circles.

Fortunately lesson number two followed soon afterwards – speak to people. I discovered a colleague at work who's a Level 3 swimming coach who can help me with my technique, and one of our administrators is a personal trainer who runs boot camps. One of my mates recently cycled over 200 miles in a day. Another completed Ironman Zurich. You'll be amazed at what people have achieved when you speak to them, ask for advice and help.

So why is it a secret? Well, basically I want to step up my training and prove myself before revealing that I'm actually working to a deadline. My wife is wonderfully supportive but having witnessed me at various events has her concerns about my survival. My mum suggested recently, "Isn't it about time you gave up on these things." So currently I'm not exactly blessed with a close support, you can do it network.

For now I'm not saying very much about my Lakesman goal, the journey after all starts with the first step and not the brash statement of unproven intent. I have a time for each discipline in mind, but I need to convince the rest of my body. Then I'll be able to convince everyone else. As the months pass and you read about my progress, I guess though my efforts will become less of a secret!

TARGET: TAFF TRAIL & PEN Y FAN

The challenge nears and Neil is to be joined by others



NEIL SPENCER, 34 lives in Newport and is a former soldier.

It's now getting close to my planned event on December 4th. I'll be aiming to tackle both the Special Forces' Fan Dance – over two sides of Pen Y Fan (a distance of 24km) and also the Taff Trail (88km) from Brecon to Cardiff Bay in one hit. My target time is sub 24 hours.

Training for the challenge has been going well, although because of my knee injury, I've kept things more on the light side. I do have an appointment with a knee-specialist pretty soon and no doubt he might suggest I'm mad to attempt such a challenge... Hopefully I'll prove him wrong. Walking for 70 miles is more about mental and kit preparation rather than an extremely high level of fitness.

Obviously to endure the challenge I'll make sure I have enough food and water with me, and every bit as importantly, a first aid kit with blister plasters (lots of them), plus of course a mobile and plenty of cold and wet weather gear.

I'll not be walking alone as I've had a few people come forward to keep me company – one is a reader of this page who made contact through Facebook and another comes from my former regiment. Louis is raising money for the charity, Scotty's Little Soldiers. Scotty provides day-trips and gifts for children who have lost parents, while serving in HM Forces. (Donations can be made at, justgiving.com/louis-morgan3)

As you'll know I'm raising funds for the Cystic Fibrosis Trust – in recognition of a young Newport girl, called Amy Smith who suffers from the illness – and Talking2Minds (talking2minds.co.uk). The latter is a mental health charity set up for soldiers who suffer PTSD.

It's a charity very close to me... in 2004 I only just escaped death when a car bomb exploded 20 metres from me. I was hit by shrapnel – my left arm and back taking the full blast. I'll admit that I've suffered the physical and mental scars left by this attack and charities such as Talking2minds are very much needed. My double challenge will soon be here and hopefully I'll not be walking alone but with some new-found mates.

■ If you'd like to experience the Fan Dance yourself then checkout thesefxperience.co.uk.

Ask the experts

From road bike tire pressure to vitamin C use to how to make the most of winter, our experts have all the answers. Email your questions to of.ed@kelsey.co.uk



SEAN MCFARLANE
ADVENTURER,
SEANMCFARLANE.CO.UK

Q: I'm keen to get into the outdoors over the winter and run, bike and hike. What tips have you got in terms of kit/other needs/requirements?

Terry Jones, by email

A: Admittedly UK weather in winter can be a challenge but remember there's no such thing as bad weather, just poor kit choices!

With recent huge steps forward in technology and clothing, there really is no excuse not to get outside all year round and at any time of day. Firstly get yourself a good set of lights. Modern head torches are fantastic and good value, especially if you shop online. Most of them will double up for bike lights and whilst I wouldn't bother road biking in the dark (mainly for safety reasons), I love nothing more than mountain biking on a cold crisp winter's night. I'm proud to say I've never been on a turbo and hopefully never will. Just get out! There seems to be the strange misconception in this country that when it's dark in the winter that means it's poor weather. That's not true.

Clothing is of course crucial. Base layers are always a good idea and Buffs are great. Take time to choose the right jacket knowing that if it says it's breathable, waterproof, windproof and lightweight it's probably not exactly telling the truth. It's likely you'll have to sacrifice one of those four, especially if you don't want to break the bank.

GPS is invaluable and most modern phones have apps that will help you here. I also love my spikes – lightweight crampons that you put over your running or hiking shoes. They've got me out of trouble on the mountains on several occasions.

I would argue that hydration in winter is more important than in summer, primarily as it's easy to think that in winter you don't need to drink and that you're not sweating. So adopt the usual rules and as long as you're not making the snow yellow (if you had to wee outside) that's fine!

Invest in a decent running and hiking rucksack that you can also use whilst mountain biking – but do check that it's comfortable whatever the activity.

Finally, why not celebrate the winter instead of just trying to grin and bear it? Ski touring makes for a superb day's adventure and modern wetsuits mean you can surf the winter waves in warmth. With thought, planning and with the right gear the change of seasons can usher in a "can do" attitude and not a "can't do that" one.





ANDY HAMILTON
SPORTS PERFORMANCE AND
NUTRITION EXPERT,
ANDREWMARKHAMILTON.CO.UK

Q: I take a daily vitamin C supplement, which seems to help me avoid colds, especially in winter. But I've heard that taking too much can actually be harmful. Why is this and how much should I be taking?

Mike Lynton, by email

A: It depends on how much vitamin C you're taking. The UK Reference Nutrient Intake for vitamin C (RNI equals the amount of a nutrient that is enough to meet the dietary needs of most people) is set at 40mgs per day. However, although RNIs contain a built in safety margin, evidence is mounting that higher than RNI levels may be required to produce optimum health, especially for the antioxidant nutrients such as vitamin C and E. This, together with vitamin C's reputation as an immune booster and protector against the common cold, explains the popularity of vitamin C supplements containing 30-40 times the RNI

figure. However, more recent research has shown that while vitamin C at moderate intakes acts as an antioxidant, protecting cells against free radical damage, at very high intakes, there's evidence it can act as a "pro-oxidant", especially in the presence of the mineral iron, and under these conditions, actually cause damage to the cells in our body.

Although the scientific jury has yet to make a definitive recommendation on the optimum daily intake of vitamin C for health and antioxidant protection, most leading nutritionists believe that something in the region of 250-500mgs of vitamin C per day is a fairly good rule of thumb for adults. It's also worth adding that vitamin C works synergistically with other antioxidant nutrients such as vitamins A and E and the mineral selenium, so you're much better taking any C supplement as part of a multi-vitamin/mineral complex, containing these other nutrients.



JACOB TIPPER
CYCLE COACH WITH
ON THE RIVET COACHING,
ONTHERIVETCOACHING.COM

Q: I've heard that playing around with tyre pressure can make a big difference to road performance. I try to keep my tyres at the recommended psi, should I do this?

Sarah Williams, by email

A: Tyre pressure can have a huge influence on road performances and varies massively based on terrain or the conditions in which you are riding. While it may be rare for you to win a race with the correct tyre pressure, it's very possible for you to lose one with the incorrect pressure and usually in the most painful of ways (by crashing out).

One of the most common mistakes is thinking you need the maximum pressure in your tyres to go fast, this is often around 120psi for a

standard road bike tyre. Now if you are doing a dual carriage way 10 mile TT that is fine, but for normal road conditions it's too much. A lower pressure will increase the contact area between the tyre and the road, which may not sound quick, but on bumpy surfaces it allows the wheels to absorb the bumps and allows you to keep the power down instead of bouncing you around the road. The increased traction from lower pressures is also vital for cornering on your road bike, especially in the wet. In a town centre criterium, on a wet technical circuit, riders may go as low as 80psi. My recommendation would therefore be 90-95psi on wet days or rough surfaces and going up to 105-110psi if you are on smooth roads on a nice day.

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500m Swim (Lido) / 20 km cycle / 5 km run
- May 15th** **SwashBuckler Middle Distance Triathlon**
Bucklers Hard, Beaulieu, SO42 7XB
1.9 km Swim (O/W) / 90 km Bike / 22km Run
- May 29th** **New Forest Triathlon**
Ellingham WaterSki / Moyles Court School, BH24 3NF
1.1 km Swim (O/W) / 33km Bike / 9km Run
- New Forest Novice Triathlon**
Ellingham WaterSki / Moyles Court School, BH24 3NF
400 metre Swim (O/W) / 33km Bike / 6km Run
- June 12th** **Lymington (Yacht Haven) Sprint Triathlon**
Lymington Yacht Haven Marina, Lymington, SO41 3QD
750 m Swim (O/W) / 20 km Bike / 5 km Run
- June 26th** **Gladiator Triathlon**
Bucklers Hard, Beaulieu, SO42 7XB
3.8 km Swim (O/W) / 180 km Bike / 42.2 km Run
- BoskMan Triathlon**
Bucklers Hard, Beaulieu, SO42 7XB
2.7 km Swim (O/W) / 125 km Bike / 21.1 km Run
- Aug 21st** **New Forest Triathlon**
Ellingham WaterSki / Moyles Court School, BH24 3NF
1.1 km Swim (O/W) / 33km Bike / 9km Run
- New Forest Novice Triathlon**
Ellingham WaterSki / Moyles Court School, BH24 3NF
400 metre Swim (O/W) / 33km Bike / 6km Run
- Sept 25th** **New Forest Middle Distance Triathlon**
Ellingham WaterSki / Sandy Balls Holiday Park, SP6 2JZ
1.9 km Swim (O/W) / 90 km Bike / 22km Run

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FOOD



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Natural pain remedies

YOU COULD POP a couple of NSAIDs (non-steroidal anti-inflammatory drugs) to reduce the pain and soreness that can be associated with exercise, or you could eat some sweet potatoes, oranges, strawberries, ginger, and pineapple, for example. Each of these foods (and there are many others) has natural anti-inflammatory properties and can actually help to strengthen your soft tissue (muscles, ligaments and tendons).

Fruit and vegetables containing vitamin C act as a stimulus for the formation of collagen. Collagen is a key constituent of soft tissue.

The strength and stiffness of soft tissue is very much a product of how much collagen there is in it. Stiffer tendons are less prone to injury and can produce greater force. Exercise

stimulates collagen in very much the same way as load bearing exercise does bones, thus ensuring optimum vitamin C consumption will boost the production of collagen during recovery. (As you'll read on page 84, you'll also discover that vitamin C is equally important when it comes to maximising iron consumption, crucial for optimum endurance performance.)

Strawberries contain phenols and these can combat many inflammatory disorders, such as osteoarthritis. (Inflammation is your body's response to injury or infection.)

Like most orange-coloured vegetables sweet potatoes are great sources of vitamin A and beta carotene, and as well as vitamin C they contain other vitamins and minerals, including

vitamin K, the B complex vitamins and the mineral potassium. This makes them an equally great anti-inflammatory and anti-oxidant.

Ginger has also been shown in studies to reduce the incidence of the delayed on-set of muscle soreness (DOMS). Whilst Pineapples contain bromelain – a substance that has also been found through research to be very beneficial in reducing the pain, swelling and bruising associated with musculoskeletal injuries.

So perhaps you should think before reaching for a "pain pill" and instead reach for some ginger or any of the other fruits and veggies mentioned above. Your fruit bowl could become your medicine cabinet.

IRON

HORSE POWER

Andrew Hamilton looks at recent research into iron nutrition and explains why it matters for all fitness enthusiasts, but especially women and vegetarians.

ASK MOST PEOPLE to name a crucial mineral for health and they'll probably mention iron. But while the role of iron in forming haemoglobin in red blood cells (required to transport oxygen around the body to produce energy) is widely understood, many people struggle to meet their iron requirements – something that can seriously dent performance during activity. So why is iron nutrition such a challenge, and how can you make sure that you don't fall into an iron insufficiency trap?

IRON CHALLENGES

There are three key reasons why maintaining optimum iron nutrition can be difficult, especially for those who are very active and training regularly:

■ **Absorption** - The iron in many foods (especially non-animal foods) tends to be "locked up" very tightly indeed, making it hard to release it for absorption into the bloodstream.

■ **Losses** - Iron losses are often higher in those who do regular endurance training, particularly women.

■ **Sensitivity** - Those who are involved in endurance training may be more sensitive to iron insufficiency than sedentary folk. Let's take a look at these factors in more detail.

IRON ABSORPTION

Without delving too much into the biochemistry, the key thing to understand is that absorbing iron is actually quite difficult. In living systems, iron carries a positive electric charge, which means that it readily becomes tightly bound to any molecules nearby containing a negative charge, for example some carbohydrates. So while many carbohydrate foods contain iron, the iron may be bound so strongly that the process of digestion is not able to pluck them away. The iron stays joined to these carbohydrates as they pass through the digestive tract and passes out largely unabsorbed.

This accounts for the poor iron bioavailability of many iron-rich plant foods – the iron's there, but can't easily be prised away for absorption. Even in foods whose iron is readily available, uptake can be considerably reduced by consuming other foods or drinks containing "iron binders", for example tea, which contains tannic acid and readily binds to iron, rendering it far less available to the body.

VEGETARIAN CHALLENGES

Numerous studies show that compared to a meat-rich diet, following a well-balanced vegetarian diet offers a number of potential health benefits such as lower blood pressure, a reduced risk of cardiovascular disease and stroke and a lower risk of some cancers(1). There's also no doubt that a vegetarian diet rich in whole grain carbohydrates is ideal for those who exercise or train regularly(2).

When it comes to iron nutrition however, care is needed because not only is there the risk that the iron content of a vegetarian diet is lower but also that the iron in that diet may be less absorbable than an equivalent meat-containing diet. The overall result is that vegetarian athletes (and those who eat just small amounts of meat and fish) may struggle to maintain an optimum iron status – even among athletes who have good overall knowledge of nutrition.

A recent study provides a good example of why caution is required. Australian researchers looked at the diets and nutritional knowledge of 107 women and what effects this had on the women's actual iron status(3). The first finding was that the average daily intake of iron was 11.2mgs per day (compared with the recommended 14.8mgs per day for women). Importantly, while those with better nutritional knowledge tended to have higher intakes of iron, they were still likely to fall short of the

IRON DEFICIENCY RISK FACTORS

All of the factors below can contribute to an increased risk of an iron deficiency. Those marked with an asterisk indicate a more significant risk:

- Any sport involving significant volumes of running or other forms of endurance exercise*
- Being female
- Being female and having regular periods*
- Having had children
- A history of anaemia in the family
- A vegetarian diet
- A vegan diet*
- Consuming tea and coffee with meals*
- Using bran products
- Eating only white meat and fish (i.e. not red meat)
- Giving blood regularly*
- Using aluminium or enamel cookware (not stainless steel or iron)
- Frequent use of antibiotics, aspirin or antacids (indigestion remedies)



"...giving extra iron boosted levels of tissue iron storage proteins and more notably, it significantly boosted the endurance capacity of athletes."

recommended daily intake. And when it came to the actual iron status of the women, those who avoided meat or had a low-meat diet tended to have a notably poorer iron status than women who ate meat regularly – regardless of nutritional knowledge.

Why does this matter? Well, many of you reading this will either be vegetarians or simply eat very little meat on a regular basis. Even among elite athletes, vegetarianism is known to be popular. For example, a recent study into the dietary regimes and practices of athletes competing at the Delhi 2010 Commonwealth Games found that the majority (62%) of athletes reported following one or more dietary regimens. In particular, vegetarian athletes or those avoiding meat comprised over 20% of the athletes(4).

IRON LOSSES

Iron losses present another hurdle to optimum iron nutrition. Unlike many other minerals, considerable iron losses are possible above and beyond losses that occur via natural wastage. For example, in menstruating women monthly blood losses during periods account for an average loss of around 28mgs per month –

easily doubled if periods are heavy or intrauterine devices are used.

There's also a growing body of evidence that heavy training, particularly endurance training, is a major cause of iron loss. For example, research on trained cyclists showed that six weeks of high-intensity interval training depressed haemoglobin, haemocrit and red blood cell count (three different markers of iron status)(5). Meanwhile, serum ferritin (a blood protein involved with iron storage) decreased significantly by week 5 and remained depressed even in the recovery phase.

Iron loss caused by endurance exercise has also been confirmed in other studies. For example, a large and comprehensive study found that it was a particular problem in runners(6), while elite swimmers undergoing heavy training have been shown to suffer large drops in serum ferritin(7).

IRON SENSITIVITY

Given the facts of iron nutrition, it's unsurprising that iron deficiency is surprisingly common in athletes – particularly female endurance athletes(8-12). These results are enough to set alarm bells ringing but recently published research suggests that ensuring optimum iron nutrition could be even more challenging than previously thought(13).

In a meta-study (a study that pools together data from all the previous studies on a topic), researchers set out to discover the effects of iron supplementation on endurance athletes who had had iron-status testing and were not found to be iron deficient using conventional

haemoglobin tests (the sort your GP might give you). Their results showed that giving extra iron boosted levels of tissue iron storage proteins and more notably, it significantly boosted the endurance capacity of athletes.

Why should this be the case? Well, it seems that the conventional criteria used to determine iron status might not be sufficiently sensitive for athletes in training. In other words, just because your levels of haemoglobin are in the reference range, this doesn't necessarily mean that your body tissues have the optimum amount of iron needed to maximise your endurance performance.

The importance of these findings is to underline just how critical iron is for performance. Indeed, some scientists now believe that tissue iron deficiency without anaemia can actually blunt the training adaptations that occur following endurance training(14,15). In other words, the same volume and intensity of endurance training could produce less of a performance gain if that training is carried out when your iron stores are not optimised.

TAKE ACTION

OK, let's summarise what we've learnt so far and make some practical suggestions. Iron is an absolutely vital nutrient for endurance performance. Not only is it needed for oxygen transport (via red blood cells) and energy production in the muscles, even a slightly sub-optimum iron status can impair performance and blunt training adaptation. To complicate matters further, absorbing iron from

TABLE 1: COMMON TESTS TO DETERMINE IRON STATUS

METHOD	VALUES Normal	Depleted	Anaemic
Haemoglobin Women:	11.5-16.5 g/dl		<11.5 g/dl
Men:	13.5-18.5 g/dl		<13.5 g/dl
Serum Ferritin	40-160 mcg/L	20 mcg/L	<12 mcg/L
Total Iron Binding Capacity (TIBC)	300-360 mcg/dl	360 mcg/dl	410 mcg/dl
Transferrin Saturation	30-50%	<30%	<10%
Haemocrit	37-47%		<37%
Serum Transferrin Receptor (STFR)*	2-5mgs/L	>5mgs/L	

*NB: different laboratories may have different reference ranges for STFR due to differing assay procedures

the diet isn't easy – especially if little or no meat is consumed – and research shows that endurance athletes (especially female athletes) suffer iron losses during periods of heavy training, which means they definitely need more iron than the average sedentary couch potato!

At this point, you may be wondering if you should be routinely supplementing with iron. Unfortunately, unless you have a known iron deficiency as shown by a specific iron status test (see Table 1), this is not recommended. Firstly, self-dosage on high-strength iron supplements for long periods of time can induce toxicity. Secondly, large doses of iron can reduce the uptake of other important minerals such as zinc and copper, creating possible nutrient imbalances. A better way to address iron intake is to try and improve iron consumption on a day-to-day dietary basis. The practical tips shown in the box-out and foods in Table 2 show how this can be done.



PRACTICAL TIPS

- Non-vegetarians - try to include some lean cuts of red meat in your diet once or twice each week.
- Vegetarians - try to include more beans (especially lima beans), lentils, dark green leafy vegetables in your diet, as well as eggs and nuts, and other iron-rich foods (see Table 2).
- All athletes - try to consume plenty of vitamin C-rich foods (citrus fruits, berries, new potatoes, broccoli, sprouts, tomatoes, peppers, kiwis etc with your iron-rich foods. Vitamin C helps convert dietary iron into its most absorbable form in the body, which can increase uptake from the gut by up to 4 times.
- Consider baking your own bread using teff flour; teff is much richer in iron than other whole grains and makes a great iron-rich carbohydrate food.
- Don't drink tea and coffee with your meals; the natural tannins present in these drinks strongly bind any iron present, making it less available to the body.
- Don't use bran or other products with added fibre. Bran is high in compounds that bind iron and make it less absorbable. If you want more fibre in your diet, get it by eating whole grain breads and cereals in the first place.
- Cook using stainless steel cookware – it can add useful amounts of iron to cooked foods.
- Don't take iron supplements without a proven need; the use of high-strength iron supplements for long periods of time can induce toxicity. If you think you are at a high risk of iron insufficiency (see Iron Deficiency Risk factors box page 85), ask your GP for an iron status test and one that includes serum ferritin as well as haemoglobin.



TABLE 2: GOOD VEGETABLE SOURCES OF IRON

Food	Iron (milligrams)	Food	Iron (milligrams)
Teff bread (100g) (from red teff flour)	5.6	Tofu, firm (½ cup)	2.0
Fortified breakfast cereal (1 cup)*	4.5	Pretzels (1oz)	1.2
Pumpkin seeds (1oz)	4.2	Whole-wheat bread (1 slice)	0.9
Blackstrap molasses (1 tablespoon)	3.5	Green beans, cooked (½ cup)	0.8
Spinach, boiled (½ cup)	3.2	White bread, with enriched flour (1 slice)	0.8
Red kidney beans, cooked (½ cup)	2.6	Egg yolk, large (1)	0.6
Prune juice (¾ cup)	2.3	Peanut butter, chunky (2 tablespoons)	0.6
Lima beans, cooked (½ cup)	2.2	Apricots, dried (3)	0.6

References; 1. J Am Diet Assoc. 2009 Jul;109(7):1266-82; 2. J Am Diet Assoc. 2009 Jul;109(7):1266-82; 3. Appetite. 2014 Oct;81:225-31; 4. Int J Sport Nutr Exerc Metab. 2014 Feb;24(1):28-36; 5. Int J Sports Med. 2002; 23(8): 544-8; 6. Med Sci Sports Exerc. 2002; 34(5): 869-75; 7. Physiol Behav. 2002; 75(1-2): 201-6; 8. Nutr Exerc Metab. 2011 Dec;21(6):507-14; 9. Pak J Biol Sci. 2010 Jan 15;13(2):93-6; 10. Eur J Appl Physiol. 2008 Apr;102(6):703-9; 11. J Am Diet Assoc. 2005 Jun;105(6):975-8; 12. J Adolesc Health. 2009 Sep;45(3):286-91; 13. Br J Sports Med. 2014 Oct 31. pii: bjsports-2014-093624; 14. Am J Clin Nutr. 2002 75(4): 734-42; 15. Am J Clin Nutr. 2004 79(3): 437-43;

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COAC137

15 Ways to eat like a pro cyclist

As chef of Team Tinkoff-Saxo, Hannah Grant knows how to fuel world-class cyclists, like Peter Sagan and Alberto Contador. Here she reveals what you can learn from her culinary philosophy.

Words PMark Bailey Pictures Corbis & Shutterstock

01 FOOD IS MORE THAN JUST FUEL
"Food for athletes can be very inspiring and tasty. You don't just have to eat a giant portion of chicken and pasta every day. Before working for the Tinkoff-Saxo cycling team I worked in restaurants so I know the importance of taste and presentation. I also worked on a kiteboarding expedition boat so I got to see how much food active athletes need to eat every day. An athlete's food has to look inviting and beautiful. Some of my most popular dishes are things like leg of lamb with parsley and potatoes or salmon with orange and ginger. These dishes are healthy but tasty and colourful too."



02 MIX UP YOUR CARBS
"There is always pasta available for the Tinkoff-Saxo riders if they want it but we like to offer a wide range of alternative carbohydrates such as polenta, sweet potatoes, brown rice and risotto. It stops you getting bored of the same old foods and means you can enjoy a wider variety of dishes."



03 FAT ISN'T YOUR ENEMY
"Riders enjoy a lot of cold-pressed fats like high-quality olive oil, as well as hazelnut oil, vinaigrettes, flaxseed oil and avocados. We step away from the idea that everyone should be scared of fats. Healthy fats are very important for everything from producing energy during exercise to your brain health and the functioning of your nervous system. Fat also makes your body feel more satisfied, so if you completely avoid it you will just feel hungry. It's a fine balance: you don't want to overuse fats but you do need them."

04 BECOME A GINGER NUT
"Ginger shots made from raw ginger juice are very good for athletes and we use a lot of ginger in our recipes. It is a functional food because it is anti-inflammatory so it helps the muscles and joints after a long day of exercise. When the joints get agitated and annoyed, ginger can help to keep that inflammation down."

05 CUT OUT GLUTEN TO SHED WEIGHT
"I provide a selection of wheat-free alternatives like buckwheat noodles and quinoa to help athletes lose a bit of weight. The ground rule is that the older you get, the slower your metabolism becomes. Some of the older riders find that all of sudden they can't eat the same things as when they were younger because if they do they gain a bit

around their stomach. Even an extra 2-3kgs can be too much for professional riders. One solution is to cut out wheat products and go for wheat-free alternatives. It is a good way to monitor your weight naturally without starving yourself. You can eat the same amounts but still lose 2-3kgs because wheat can be such a problematic starch for older athletes to break down."

06 BOOST IMMUNITY WITH BLUEBERRIES AND BROCCOLI
"I am super-happy with the riders eating lots of blueberries and broccoli. They taste very good and are full of natural antioxidants which help the body recover faster after exercise. The nutritional content of food is very important. It's not just about carbs for energy and protein for muscles. The nutrients and vitamins are useful for battling small colds and symptoms of illness too. So we don't have many plain iceberg lettuce salads. We want everything to have a high nutritional quality, so we will have a salad with maybe rocket, spinach, vegetables and beetroot instead."

07 BECOME AN IRONMAN WITH RED MEAT
"When the riders are facing a big mountain race we pump up the iron in their diets by offering them more red meat. Your blood needs iron to transport oxygen around the body or you will lose muscle power. We work with a nutritionist Stacy Sims, so we know that we need to start iron-loading muscles about a week before the race."

08 INJECT VARIETY INTO YOUR DIET
"I always ensure a big variation in meals and ingredients. We change it as much as we can because if you are an athlete you will eat a lot of food so you need a good variety - both for your body and also for your mind. For example, every day there will be some sort of chicken dish but there will also be other protein options like fish, lamb, veal or rabbit. Protein is really important for athletes to help rebuild muscle fibres."

Peter Sagan of Team
Tinkoff-Saxo keeps his
tank filled with optimum
food fuel and so can you



09 GET YOUR HANDS DIRTY

"If you cook your own food you will always eat more healthily. No artificial nonsense or hidden fat and sugar; just clean, whole ingredients. I like to bake different breads for the riders from scratch. If you make a good, healthy bread with organic Danish flour you will find you only want to eat two slices, not ten slices, because proper homemade food is so filling."

10 ADAPT YOUR CARB INTAKE

"It is important for our riders to adapt their diets to their activities. After a short ride that hasn't taken up much energy, they might reduce the amount of carbs on their plate and have lots of vegetables instead, so maybe a nice, crisp vegetable salad, with some chicken and goat's cheese and olive oil. It is a fine line between making sure they are not hungry in training but also making sure they don't gain weight. On a bigger training day or during a race they will have way more carbs, so they adapt their diet to match what their bodies need."

11 THE BREAKFAST OF CHAMPIONS

"A good breakfast for a rider would be some gluten-free porridge with fruit or some soaked muesli with chopped nuts and seeds. Then some eggs - maybe an omelette - and sourdough bread for a bit of protein. Riders tend to have their breakfast about three hours before the start of a race so



they have enough time to digest it."

12 STAY LIGHT IN THE MOUNTAINS

"On the actual day before a big mountain stage we would serve more easily digested foods, such as chicken and fish, instead of something tough like red meat or a braised steak. Before a heavy day like that you want a light protein which the body can digest quickly. You have to think about the conditions all the time. For example, on a cold day we might have some soup afterwards."

13 ALWAYS SNACK ON VEGGIES

"It is very easy to confuse being tired or moody with being hungry and needing more food. So food is not always the

answer. But when riders are hungry we encourage them to go crazy on veggies not because they will make them feel full but because they contain lots of nutrients and not much fat. Grilled veg is perfect."

14 DON'T GET JUICED

"We aren't into juices because when you juice things you take the fibre out of them and you just keep all the sugars. Your body doesn't know what kind of sugar you're taking on, whether it is from a vegetable or a cake, so you will absorb the sugar from the juice just as you would absorb the sugar from a soda. Of course, fruit also contains vitamins and minerals, but we prefer to keep the fibre in the meal by serving them whole."

15 TREAT YOURSELF

"It is not always possible to give the riders what they want for dessert but we do serve some tasty options - often using natural, sweet food like honey or apples. My main rule for dessert is that you will be more satisfied for example, with a small piece of good-quality, homemade brownie than a half-hearted, weird chocolate cake full of sugar and rubbish."

■ **The Grand Tour Cookbook** by Hannah Grant (Musette Publishing) contains hundreds of healthy recipes for athletes and is available now from, hannahgrantcooking.com



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TGO345

19 Ways To Get Your Fill

Sports science shows that 60gs of carbs per hour is the optimum refill for endurance athletes. But what does that look like? We examine the science behind the formula and provide ideas for on the road and in the saddle snacks that will give you that perfect carb fix.

Words Rob Kemp Pictures Shutterstock

DO YOU KEEP your race weight down by only packing the bare minimum of snacks? Or do you fill your pockets and pouches until they're overflowing? Science suggests that there's an ideal amount of carbs an endurance athlete can consume each hour of an event to boost their energy levels without over burdening their digestive tract. Research – as indicated – identifies the optimum amount as 30-60g per hour. This amount is ideal to minimise a negative energy balance and essential to success.

"The energy value of this amount of carbs is around 4kcal per gram of carbohydrate (CHO)," explains Emma Barraclough the Senior Sports Nutritionist for Science in Sport (SiS), scienceinsport.com. "So 30g per hour provides 120kcal, and 60g will provide 240kcal. The longer the event you are doing, the higher up that range you should aim for as the risk of becoming significantly glycogen deficient is greater."

The required amount is pretty clear – but the ideal format from which to consume that ideal amount isn't so definite.

"Research suggests that solid food is digested more slowly than liquids," explain Barraclough. "But there's conflicting work in sports nutrition research that indicates that carbohydrate in a gel/drink/bar is oxidised at a similar rate. This is probably to do with the protein, fibre and fat content."

In general sports nutrition foods that are designed for fuelling during exercise are all low in protein, fat and fibre. "Which isn't typical in general food

USING GELS

"Most gels contain 20-30g of CHO per serving," says Barraclough. "Feeding a little and often seems to be the optimal fuelling strategy as far as current understanding goes, so serving sizes of around 25g are ideal."



terms," says Barraclough. "So they're still digested pretty quickly. This wouldn't apply if an athlete was using standard food in the same way. A flapjack for instance is high in fat and typically has quite a bit of protein and fibre in it too, so it will work more slowly." Barraclough adds, "Generally, the higher the intensity of the exercise, the more blood flow gets diverted to the working muscles, heart and lungs, and away from the gut. This tends to mean that athletes will tolerate liquid forms of energy better in high intensity scenarios, such as racing, and won't really have any issues with having solid foods during steady-state training."

FUELLING YOUR DISTANCE

■ **Snack shot:** Short rides/runs 1-hour or less.
Drink: water. Eat: you'll use your body's energy stores (but take a back-up containing around 30gs carbs).

■ **Snack shot:** Mid-length ride/longer run 1-3 hours.
Drink: For carb replenishment look to 500ml sports drink/bars/energy gels per hour to provide 30-60gs of carbs.

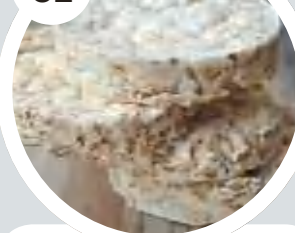
■ **Snack shot:** marathon run/ride of 3 hours plus
Drink: 1 bottle of water and 1 bottle of sports drink per hour at least plus 30-60g of carbs per hour in total.



Get your 30-60g carb fill

Depending on your training or event you can find plenty of ways. You'll find 19 simple fills to do so below and overleaf from a wide selection of fruits, vegetables, nuts and grains and even marshmallows and popcorn.

01



RICE CAKES

Two

Calories..... 70	Fat..... 0.5g
Protein..... 1.5g	Fibre..... 0.8g
Carbs..... 15g	

02



PEANUT BUTTER & BANANA WRAP

Calories... 390	Fat..... 16g
Protein..... 11g	Fibre..... 4g
Carbs..... 56g	

03



FROZEN HASH BROWNS

4

Calories.. 240	Fat..... 12g
Protein..... 3g	Fibre..... 2.4g
Carbs..... 32g	

04

**JELLY BABIES****Half a 150g bag**

Calories...250 Fats.....4g
 Protein.....2g Fibre.....2g
 Carbs.....60g

05

**DRIED FRUIT FLAPJACK****100g bar**

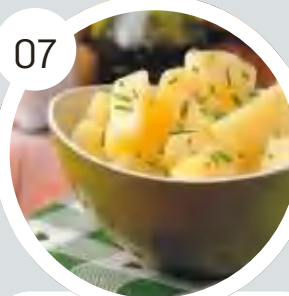
Calories...290 Fat.....22g
 Protein...4.6g Fibre.....4g
 Carbs.....60g

06

**JAFFA CAKES****4 cakes**

Calories...180 Fat.....4g
 Protein.....2g Fibre.....1g
 Carbs.....34g

07

**BOILED POTATOES****3 small potatoes**

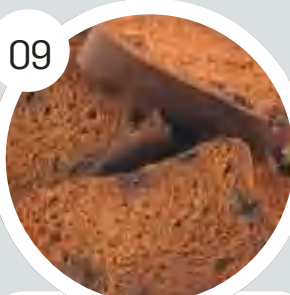
Calories...300 Fat.....0.5g
 Protein.....5g Fibre.....6g
 Carbs.....60g

08

**TRAIL MIX****Handful 40g**

Calories...170 Fat.....7g
 Protein.....2g Fibre.....2g
 Carbs.....30g

09

**FRUITY MALT LOAF****3 slices**

Calories...312 Fat.....2.1g
 Protein...6.9g Fibre.....2.4g
 Carbs...66.1g

10

**PRETZELS****10 twists 60g**

Calories...228 Fat.....1.6g
 Protein.....6g Fibre.....1.8g
 Carbs.....48g

11

**DATES****50g**

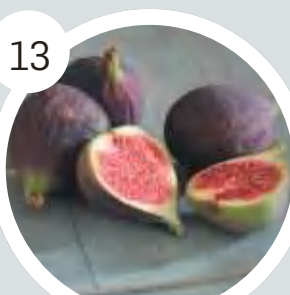
Calories...140 Fat.....0.2g
 Protein...1.2g Fibre.....4g
 Carbs.....32g

12

**DRIED APRICOTS****50g**

Calories...160 Fat.....0.3g
 Protein...2.5g Fibre.....2.5g
 Carbs.....41g

13

**FRESH FIGS****3 medium**

Calories...101 Fat.....0.4g
 Protein...0.9g Fibre.....4g
 Carbs.....27g

14

**WHOLE-WHEAT PASTA****75g**

Calories...242 Fat.....1.9g
 Protein...9.4g Fibre.....7.5g
 Carbs...46.9g

15

**MICROWAVE POPCORN****50g**

Calories...190 Fat.....2.2g
 Protein...11g Fibre.....6g
 Carbs...35g

16

**JAM SANDWICH****1 on white bread**

Calories...280 Fat.....9g
 Protein.....0g Fibre.....1g
 Carbs.....43g

17

**MARSHMALLOWS****6 standard size**

Calories...140 Fat.....0g
 Protein.....0g Fibre.....0g
 Carbs...36g

18

**COCONUT WATER****2 x 330ml cartons**

Calories...120 Fat.....0g
 Protein.....0g Fibre.....0g
 Carbs...30g

19

**HONEY****2tbsp (42g)**

Calories...128 Fat.....0g
 Protein...0.2g Fibre.....0g
 Carbs...34g



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GEAR



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TEST



Life painting class

Transform all your outdoor kit into reflective gear with this invisible paint.

VOLVO LIFEPAINT, £18.95, volvocars.com/uk/lifepaint

It takes a certain amount of confidence to spray your favourite kit with paint, but this is no ordinary paint. Like a superhero, Volvo Cars LifePaint transforms itself at night: by day it's impossible to see but in the dark it's highly reflective, shining brightly as it catches the light.



The innovative paint is distributed through Volvo dealerships as part of the Swedish manufacturer's vision that by 2020, no one will be killed or seriously injured by a new Volvo.

LifePaint is water-based and can be applied to clothes, shoes, helmets, backpacks, and even dog leads and collars. It's transparent, lasts about a week, and washes off, so you'll need to keep applying it, but as a way of standing out in traffic, whether cycling, running or walking, it's one of the neatest solutions we've ever seen. And just think about its possibilities for the office Christmas party...



Turbo boost your training

When the roads get icy, there's often no option but to train indoors - you'll find the latest turbo trainers are smoother and more useable than ever.

WHAT TO LOOK FOR

FRAME A stable, secure frame is crucial to safe training, especially for big watts. There's a big difference in designs from simple, easy to store A frames to spring loaded frames intended to mimic road movement, and an increasing range of rear wheel removal, direct mount trainers.

CLAMP The frame is only as secure as the clamp that holds your bike, but an awkward, slow set up can be enough to keep you on the couch if you're already less than excited about the idea of going into the garage to train.

ROLLER The roller is the vital link between bike and trainer. That means it has to cope with a lot of power and heat without slipping, growling, juddering or killing your tyre prematurely. Urethane rollers are generally quieter at lower speeds and easier on your tyres but don't last as long as metal and can get rowdy when you're flat out.

BRAKE There are loads of ways to provide resistance to the roller. The simplest trainers use a noisy wind fan. Magnetic resistance trainers basically work like an

electric motor in reverse and are easy to change resistance on with a remote lever. Fluid trainers spin a paddle in oil and are designed to give a smoother more natural feel, but actual results vary.

FLYWHEEL The bigger the flywheel the harder it is to accelerate the trainer, but the smoother it will feel once you're actually training, helping you to maintain pedalling rhythm and morale.

REMOTE Obviously you can change pedalling load by changing

gears in the same turbo setting, but being able to change the resistance level of your trainer separately can be useful for intervals or if you share your turbo with other riders.

SMARTS Smart trainers range from add on sensors that pair with an app for speed and distance feedback to fully immersive virtual training worlds. The most advanced also include leg strength analysis and the latest training and testing protocols.



1 GIANT CYCLOTRON MAG II, £164.95

giant-bicycles.com

Giant's entry-level trainer gets off to a solid footing literally, with a heavy-duty frame, including curved front and rear crosspieces for the feet, so you'll really have to be going some to get it rocking. The clamping hardware, including the lock rings, is all-metal too and so is the clamp for the bar remote. It's not exactly pretty, but it'll handle a tough life in the garage without complaining. The roller and broad flywheel give it a reasonably smooth feel at low to medium revs. However, things do get noisy and there's noticeable vibration at higher speeds. The remote control lever is the only cheap plastic part but it gives a massive spread of brake resistance from barely noticeable to enough for an average athlete to replicate sprint intervals.

Verdict Slightly rowdy but solidly built and surefooted with a wide range of brake adjustment.

Rating: ■■■■■■■■□□□

2 TACX BLUE TWIST, £109.99

fisheroutdoor.co.uk

Tacx's Blue Twist provides the bare minimum of training features but what you get looks good and works well. The big flared main legs and broad rubber footed front legs of the frame create a more stable base than the Minoura but are a lot lighter to heave about than the Giant if you're using it for warm-ups. Once you've adjusted the driveside axle tension, the quick cam offside clamp and roller-engaging footplate make it easy to set up. It's still secure even if you decide to get out of the saddle and give it some welly. Getting the adjustment on the metal-banded urethane roller is crucial to stop slippage and some tyres will squeak until they warm up. The small flywheel can be a bit choppy too, but there's enough brake range adjustment from the foot-operated switch to cope with recovery spins or proper sweat sessions.

Verdict Slightly choppy and no remote but a stylishly executed "essentials only" trainer at an excellent price.

Rating: ■■■■■■■■□□□

3 MINOURA B60R, £150

zyro.co.uk

Minoura's B60 is a well-proven budget trainer that ticks all the boxes for basic home training as long as you're smooth. The simple U-bend and flick out front legs frame with pressed steel brake mount looks high class, but a DIY set up is pretty simple. The single-sided winding handle axle clamp is quick and easy to use too. The plastic remote lever operates a surprisingly powerful brake unit that'll allow most riders to mimic serious hills at a relatively low speed/cadence. The narrow rear stance however, can make the Minoura start walking if you really give it full gas in an interval sprint, and it's choppy and quick to slow down despite a relatively big internal flywheel. It's well priced for a remote control unit though and Minoura reliability is generally excellent.

Verdict Simple, effective, reliable and affordable trainer for smoother pedalling riders.

Rating: ■■■■■■■■□□□



4 JET BLACK Z1 MAG PRO, £174.99

chickencycles.co.uk

If you're short on storage space the Jet Black is the flattest folding trainer here. Set up is quick thanks to a pre-assembled brake unit with fast adjusting axle clamps and a neat flush fit cam arm, and it comes with a full lifetime warranty. Five different positions of the distinctive leaf style remote lever allow very subtle resistance changes, however, maximum braking force won't be strenuous enough for serious powerhouse riders. No matter how we adjusted the small diameter orange urethane roller against the tyre it still created a lot of noise too, and the small flywheel means it's got a choppy, rather than flowing ride feel. The free Jet Black app works with your own bike sensors rather than anything on the trainer too so don't expect speed and power data without investing extra.

Verdict Lifetime warranty and easy storage but surprisingly noisy and limited brake adjustment.

Rating: ■■■■■■□□□□

5 TACX SATORI SMART, £259.99

fisheroutdoor.co.uk

This new trainer from Tacx makes smart feedback as easy and affordable as possible. There's a bit of DIY required to bolt the brake onto the big alloy frame then you just need to unfold the wide stance U-shaped legs and adjust the cam action axle clamp so it centres the tyre on the metal sleeve of the urethane roller. The Smart couldn't be easier either as the brake is battery, not mains operated. Just download the free app, press the pairing button on the brake and it'll start feeding cadence, power, speed, elapsed time, distance and related max and average data to your phone/tablet by Bluetooth immediately. You can configure the display for various priorities and preferences and changing the resistance on the 10-step handlebar lever syncs with the wattage rating on the app.

Verdict Simple wireless smart data collection and display on a sorted trainer makes this a techno bargain.

Rating: ■■■■■■■■■□

6 ELITE QUBO POWER FLUID, £249

madison.co.uk

Italian turbo specialists Elite do a huge range of trainers including the creamy smooth, minimal hassle Qubo Fluid. A couple of bolts tighten the brake onto the vibration killing plastic base, then it's just a case of setting the single-sided axle spacing, throwing the monster tightening cam closed and letting the weight of the bike sit onto the roller. The big Elastogel roller gives a very smooth and quiet wheel feel, and the fluid brake is judged really well in terms of creating a natural road feel appropriate to the choice of gears. A 900 watt max means powerful riders might be maxing their gears when interval sprinting and it can slip on the rollers if you're wrestling the gears round out of the saddle, but that all adds up to a very natural and user friendly ride experience.

Verdict Smart looking, smoothly realistic fluid trainer delivering a reasonable workout at a good price.

Rating: ■■■■■■■■■□



7 CYCLOOPS SUPER MAGNETO, £300

paligap.cc

This is one serious workout partner. For a start it comes fully assembled so you don't waste training time. Just unfold the super-wide stance, locking-pin secured legs from the matt black frame and adjust the left hand hoof to dial out any wobble. Wind the single-sided axle clamp shut, tighten the big alloy roller onto the tyre until it double clicks to show the right torque, and your bike will basically feel like its set in concrete however hard you sprint. The magnetic brake comes in four settings from recovery to properly leg crushing, including a particularly clever "interval" mode with boosted speed sensitivity so you can sprint flat out then spin without having to think about anything but the pain. There's a bit of growl at high speeds, but speed sustain is epic and CycleOps trainers are legendarily tough.

Verdict Superbly built, rock solid training investment for serious athletes wanting serious workouts.

Rating: ■■■■■■■■□□

8 KINETIC ROCK N ROLL 2, £465

2pure.co.uk

Kinetic's Rock n Roll offers a genuinely unique training experience thanks to a big rubber sandwich that allows the upper section of the trainer (and you) to move in 3D for a much more realistic ride feel, particularly out of the saddle. The big, curved stabilising arms it needs add weight and means it requires more space than most others on test but once positioned the double-sided clamping system is very secure – there's a quick release latch for fast entry and exit though. The fluid brake is impressively smooth, quiet and controlled, becoming progressively harder to work against as you move up through the gears. It also holds speed well if you back off, just as it would on the road. An InRide wattage meter is also available as an add-on. It is expensive though (especially if you include the recommended £44.99 twist ring for the front wheel).

Verdict Unique 3D ride experience with an accurate road recreating hydraulic brake, but it comes at a cost.

Rating: ■■■■■■■■□□

9 BKOOL CONNECT PRO, £449.99

i-ride.co.uk

BKool's Pro is a big improvement over their debut model and that's good news for everyone. The plastic arm with its simple pop out pin connection to the brake segment looks really well, killing the buzz of the ribbed roller enough to make it unnoticeable on all but the firmest bikes and saddles. The telescopic extensions on the front leg bar add useful stability so you can properly get a hustle on as long as you don't bounce the bike off the roller. The brake is also a lot quieter and smoother with decent speed sustain too. BKool's software and app are very polished, practical and comprehensive too, with a vast range of trainer synced on-screen workouts, videos, routes or specific training sessions to go at in wattage altering 3D once you plug in the ANT+ dongle and subscribe.

Verdict Impressively user-friendly turbo that syncs easily to a vast virtual training world for subscribers.

Rating: ■■■■■■■■□□

See the light

Ride in safety by illuminating the road ahead and alerting drivers to your presence.

FRONT LIGHTS

1 EXPOSURE STRADA MK6, £269.95

ultimatesportsengineering.com

It takes a while to work through all the options on the new version of the Strada, but it's time well spent. Not only does this light have a rear minute-by-minute power gauge, but it also lets you choose between three different settings in each of five different programmes, each offering a longer burntime. Estimate the length of your ride, leave a slight margin for error, and the Strada will calculate the brightest it can shine to see you home. There are potentially 1,000 lumens on tap, and although it didn't seem like the brightest on test, the width of its beam, the certainty of its runtime, the precision of its mount and the opportunity to use a remote switch so you can change the beam while on the drops, make it an amazing piece of kit.

Rating: ■■■■■■■■■■

2 LIGHT & MOTION URBAN 850 TRAIL FC, £139.99

madison.co.uk

Delivering astonishing levels of brightness for a torch no bigger than half a decent cigar, this neat lamp casts an enticing stream of bright, white light. While it's designed for road use, it's the light we'd turn to first for off-road sorties, due to the width and brightness of its 850 lumens beam. It can manage 1.5 hours in its highest mode, and six hours in its lowest setting (although that would be too dim to ride on unlit roads or trails). It also recharges impressively quickly via USB.

Rating: ■■■■■■■■■■

3 CATEYE VOLT 800, £99.99

zyro.co.uk

Slender, neat and simple, the Volt casts a clear beam of white light for night riding. It will blaze away for 2 hours on its brightest setting, or 3.5 hours in medium brightness, which is fine for illuminating the road ahead. We also like the feature that allows you, regardless of the mode you are in, to go straight back to the brightest setting with a double click, rather than having to scroll through all of them. Our only concern is with the longevity of the plastic clamp, whose small release lever feels pretty insubstantial for regular use. Overall though, it's a very competitive price for a light this good.

Rating: ■■■■■■■■■■

4 CYGOLITE METRO 550 USB, £86.99

extrauk.co.uk

There's much to like about the Metro, from its price to its bright, white beam and robust clamp. As the first light we tested, it set an admirable benchmark for the clear view it created of the road ahead, and in daylight its pulse mode has proved particularly effective on dull, damp days. But when night falls, it understandably lags behind its more powerful rivals in this test. Good as the Metro is, we'd save up a few more pounds for the Cateye.

Rating: ■■■■■■■■■■





REAR LIGHTS

1 EXPOSURE TRACER, £49.95

ultimatesportsengineering.com

This compact, beautifully engineered light packs a mighty punch, with a dazzling 75 lumens. You wouldn't want to be behind it on a club night ride, but for signalling your presence to traffic it's exceptional when running in its brightest mode, which it can sustain for 3 hours per charge. There are three modes in all, each with the option of constant or pulse, and the weakest setting should be good for 24 hours. When you turn the light off it flashes green, amber or red to signal the state of charge in the battery. Recharging is via USB.

Rating: ■■■■■■■■■■□

2 ELECTRON R100, £34.99

madison.co.uk

As its name suggests, the R100 pumps out a retina-challenging 100 lumens on its highest setting. If brightness is your sole criterion, look no further, especially at this price. However, it's not so visible from the side as the Cateye Rapid X3. It's a bulky, awkward shape, although its pivoting mount lets you set the angle of the beam whatever the geometry of your bike. The clamp seems designed to fit a bike with an aero-shaped seat post, and didn't grip my cylindrical post as securely as other lights. It's USB rechargeable, and I timed it at slightly over 3.5 hours on full power, which is significantly longer than the Cateye.

Rating: ■■■■■■■■■■□

3 CATEYE RAPID X3, £54.99

zyro.co.uk

Two banks of LEDs deliver a dazzling 100 lumens with the Rapid X3, although the USB-rechargeable battery can only keep it up for an hour. Having one row on full power and the other in pulse mode significantly increases the run time, and in flash mode the Rapid X3 should last 30 hours between recharges. You have to make recharging a habit though, because there's no battery status on the Rapid until it switches automatically to flash mode as a signal that it's running low on power. Its long, narrow design gives it far greater all-round visibility than its closest rivals from Exposure and Electron, and it's neat and easy to fit.

Rating: ■■■■■■■■■■

4 CYGOLITE HOTSHOT MICRO 2W, £36.99

extrauk.co.uk

Not so long ago I'd have been thrilled to ride at night with a light this bright, especially with a run time of up to 100 hours in its lowest setting. Now, however, it's outshone by its rivals on test, despite its five settings and super compact size. An adjustable mount lets you tweak the angle of the beam depending on the angle of your seat post or seat stays, and it offers better visibility from the side than most, and a clever (dimmer) group riding mode, but at this price we'd choose the Electron R100.

Rating: ■■■■■■■■■■□

5 LIFELINE REAR STRIP, £12

wiggles.co.uk

Eye-catchingly bright even with just one-tenth of the lumens of its most powerful rivals means the 10 lumen LifeLine still stands out on dark roads. At this price it's very good value, its metal casing feels robust, and there's the option of attaching it to the bike or clipping it to a rucksack. A short 1.5-hour charge time delivers 2 hours on full power or eight hours on flash. A decent, budget buy.

Rating: ■■■■■■■■■■□□



Weatherproof your walks

Head to the hills with impunity under the protection of a new walking jacket.



1 MAMMUT TETON, £350

mammut.ch

Made from the same Gore-Tex C-Knit fabric as the Berghaus Civetta, the Teton boasts similarly effective pit zips to combat clamminess. On both jackets these zips are a potential weak spot compared to the closed construction of the Sprayway and Rab, but we'd take that risk for the luxury of staying cooler and drier as we head uphill. The Teton has an excellent two-way adjustable hood and two good pockets, but no external chest pocket. It's a slightly shorter, closer fit than the Berghaus, and the sleeves are better shaped, so if you're looking for a walking jacket that might occasionally double up for mountain biking, this has the slightest of edges.

Verdict: If it's in your budget, don't hesitate.

Rating: ■■■■■■■■■■□

2 LUNDHAGS GREIJ JACKET, £189.95

nordicoutdoor.co.uk

If you'll definitely head to the hills and mountains regardless of the forecast, then skip to the next jacket now. But if you reserve your walks for drier days with the prospect of showers, the Greij could be just what you're looking for. The soft polycotton fabric is soft, quiet and moves easily, compared to the stiffness of some of the shell jackets. The pockets are easily accessed when wearing a rucksack, and the hood and cuffs fasten tightly to thwart the elements. But only the hood and shoulders are waterproof – the main body is merely water resistant, and after 90 minutes in a downpour the sleeves started to saturate.

Verdict: Supremely comfortable, but not fully waterproof.

Rating: ■■■■■■■■■■□□

3 JACK WOLFSKIN FIREBOW, £140

jack-wolfskin.co.uk

The only insulated jacket on test, the Firebow offers a different type of solution for winter walking. On the plus side, it's comfortable with nothing but a baselayer underneath on cool days but on the downside the padding denies the full layering flexibility of its rivals here. It's certainly the warmest jacket on test, and if you need a waterproof for family strolls or even watching the kids play football, the Firebow is a competitively priced offering. But for serious walks, a rucksack belt makes the hand pockets inaccessible, and it lagged behind the others in terms of breathability when we raised our effort levels.

Verdict: Good for slower paced, lower effort outdoor activities.

Rating: ■■■■■■■■■■□□□



4 BERGHAUS CIVETTA, £300

berghaus.com

A top dollar price for top-drawer performance from this three-layer Gore-Tex jacket that uses Gore's new C-Knit fabric, like the Mammut Teton. It's the most breathable Gore construction yet, and allied with pit zips for ventilation the Civetta and Teton are the coolest jackets here when the going gets hot. The stiff-peaked hood is excellent in a gale, and it's really useful to be able to tighten the hood with one hand. The deep chest pocket takes a map, and the high chin guard leaves little but the eyes exposed if rain, hail or snow fall horizontally, although it soon gets steamy when fully zipped up over nose and mouth.

Verdict: Pricey, but with first class performance.

Rating: ■■■■■■■■■■□

5 RAB BERGEN, £230

rab.equipment

The Bergen exudes a sense that when the going gets tough it will prove to be the toughest of shields. Its key details are all reassuringly robust, from the external storm flap to the zips, pockets and excellent wired hood; it feels equipped to face down the heaviest deluge. Its slightly longer cut even covers your backside for greater protection, and the relatively long sleeves mean your arms stay covered when reaching up to cross a ladder style or for scrambling. Slogging up a lengthy hill carrying a rucksack, this eVent jacket felt every bit as breathable as its Gore-tex rivals, although frankly all of them led to a sweaty back.

Verdict: An excellent hill-walking jacket for wet British peaks.

Rating: ■■■■■■■■■■□

6 SPRAYWAY ZEUS, £260

sprayway.com

Made from tried and tested three-layer Gore-Tex there should be no weatherproofing issues with the Zeus, even if there are more modern and breathable Gore fabrics available. It's a generous cut, which offers the opportunity of a billows effect as you walk to circulate air if the cuffs and neck are open. And when it's time to batten down the hatches, the jacket stands up to monsoon-level rain. The adjustable hood, which is spacious enough to accommodate a helmet for climbing, moves really well with the head, and the large chest pocket easily swallows an Ordnance Survey map. Look carefully, and you'll find it on sale for the bargain price of £187 at GoOutdoors.co.uk.

Verdict: A robust, reliable walking jacket.

Rating: ■■■■■■■■■■□□

Long-term tests

The kit we've been using to see us through the changing seasons.

1 ASICS GEL KAYANO 22, £150

asics.co.uk

As the name suggests, this is the 22nd reincarnation of what many regard as an industry leader in the distance running shoe world. Can you improve on such status? Well, this is a shoe with a very different feel to its 21-year-old cousin; softer, more responsive and a tad lighter. It's a dangerous game to tinker with something that plenty were happy with but tinker Asics have, and for anyone who's struggled with the company's slightly harder feel, they've come up trumps thanks to what Asics call the FluidFit upper (but what everyday runners will tag comfortable). The completely seamless upper and the re-engineered Heel-Clutching System provides a more secure and adaptable fit. Train everyday in them and you'll be happy. You might even invite them to a race, they're that adaptable. Enjoy.

Paul Larkins, contributor

2 ACLIMA LARS MONSEN ANARJHOKA, £89.95

nordicoutdoor.co.uk

Regular readers will know how highly I regard Merino wool for baselayers, whether for hiking or cycling, but with the exception of one printed T-shirt, my drawer of Merino tops is a dull sea of black, grey and dark blue. They all perform royally, but from an aesthetic point of view they're best left concealed below a jacket. The Lars Monsen is different. Not only does it perform brilliantly, delivering lovely warmth on chilly days (I've worn it walking, mountain biking under a cycling jacket, and even on slow paced recovery runs instead of a T-shirt and jacket combo), but it also looks funky enough to wear uncovered. As a result, I've found reason after reason to keep it on, and reassuringly, like all Merino it doesn't pick up odours. The more I wear it the more I appreciate its design touches too – the high zip neck, useful chest pocket, and the thumb loops that make sure my wrists stay warm, which helps to keep my fingers warm too. It's going to be a staple of my winter wardrobe.

Jonathan Manning, contributing editor

3 FENWICKS STEALTH ROAD BIKE CHAIN LUBE £9.99

fenwicks.info

A friend of mine has set up his garage like a Formula 1 workshop for his bike; tools carefully racked, spare parts stored, wheels and tyres hung from the walls, and his bike wedged in a workstand whenever he's not riding in readiness for a spot of fettling. We couldn't be more different! For anyone who has seen my desk, it will come as no surprise that my tools are scattered and my bikes stashed higgledy-piggledy anywhere they won't get bumped or banged. Bike maintenance is simply a necessary evil, a quick-fix to stop squeaks and rattles as I ride – every minute spent fettling is a minute I'd rather be pedalling. So discovering this Fenwick's Stealth lube has been something of a godsend, not simply for silencing my chain, but for the hundreds of miles I can ride

on damp roads between applications. It goes on drop-by-drop, so there's no waste, cures between rides, and keeps my chain squeak and rub free. First class.

Jonathan Manning, contributing editor

4 BUFFALO ACTIVE LITE SHIRT, £125

buffalosystems.co.uk

When it comes to outdoor clobber, we're often told layering up is the way to go. But it's not the only way. Sheffield-based Buffalo Systems make shirts modelled on how the Inuit have kept warm for centuries, using animal hide. Buffalo shirts aren't made from buffalos (or badgers), thankfully, but they act as three layers in one. Next to the skin – and to be most effective they're meant to be worn without a baselayer or outer shell – is deliciously soft and warm Pile fleece. The surface layer is Pertex, a material created by Buffalo, it's only rainproof for about 30 minutes, but any water that gets through – including sweat and condensation – is driven back out quickly, keeping you warm. A system of layers in contrast, traps moisture, so when stationary you can quickly get cold.

I got an Active Lite for January's Spine Race. It was too warm – the Teclite version would have been a better choice – but I've used it on various shorter outings and love how reassuringly warm and old-school military it feels. It makes you wish the coldest winter were here already.

Damian Hall, contributor

5 DEEP HEAT HEAT PATCH, £3.99 FOR TWO

1.mentholatum.co.uk

Rummaging around the family medicine cabinet for some ibuprofen gel to rub on a muscle twinge in my leg, I came across this Heat Patch. It stayed warm for about four hours, and whether it helped my injury or not, the gentle heat felt very pleasant, especially without the traditional nostril-stinging scent of Deep Heat.

Jonathan Manning, contributing editor

6 KEEN LIBERTY RIDGE, £149.99

keenfootwear.com/en-gb

The changeover from lighter "fabric" boots to full leather is a sign of the changing of the seasons as sure as the leaves turning gold and fluttering from the trees. With trails becoming muddy and grass staying wet most of the day, leather uppers offer more reliable waterproofing. An impressive rubber rand protects the toe box from scuffs and scrapes, and with few seams and backed by a waterproof membrane, these Keen boots have had no trouble keeping my feet dry, a boon on a recent stormy trip to Scotland. They're a similar weight to my regular boots (Meindl Borneo), but much more flexible, which makes them feel comfier from the box, and for anyone like me with wide feet, the Keens have a very generous fit. The Liberty Ridge's grip is good on a variety of terrains and the high ankle cuff is supportive when carrying a heavy pack, although on rocky terrain I'd still prefer the stability of the stiffer sole unit in my Meindls.

Jonathan Manning, contributing editor





When I didn't make the Olympics I tried to retire from running, but I missed it too much.



Reader challenge

Thomas Payn used to race to win, but now runs for fun... although he's still winning. He recently set a new course record for the 100km Race to the Stones along the Ridgeway to Avebury Stone Circle.

WHEN PAYN WAS 24 his running nearly came to an end. He contracted Weil's disease while working on an orangutan project in Sumatra, was in intensive care for a week, and the virus proved so vicious that when he left hospital he had lost all his muscle mass and couldn't walk.

"It really made me think hard about what I wanted from my running," he says.

Regaining his fitness was as much a mental as physical battle, but six months later he ran his first marathon – in an astonishing two hours and 24 minutes. By 2009 he was ranked fourth in the country with a personal best of 2 hours and 17 minutes, and so the following year he gave up his job to train full time for the Olympics, basing himself at a training camp in Iten, Kenya.

"It was the best experience of my life," says Tom. "We would get up early, run, eat, sleep and repeat that twice a day, every day. Every

morning there would be a training session – a hard 10 mile run on Monday; a track session on Tuesday; a 15-mile steady run on Wednesday; fartlek – a key component of Keyan's training – on Thursday; two easy runs on Friday; and on Saturday a long run up to 25 miles through rolling hills, starting steadily and progressing the pace so it was pretty fast. Every evening they would have a six or seven mile recovery run."

In trials for the 2012 Olympics, Tom tripped and smashed his knee, which put an end to his London ambitions.

"When I didn't make the Olympics I tried to retire from running, but I missed it too much. Soon after, I went to Bucharest where I entered a half marathon almost by accident and won. Since then I have started increasing my distances. In 2013 I ran the Ring of Fire, a coastal 135-mile ultra in Anglesey and set the

course record.

"Recently I met a friend who has completely changed the way I look at running. I come from an elite background and running for me has always been about performance but she runs for the love of running. Now when I run I do it for the love of running rather than performance.

"My race plan for the Race to the Stones was to run hard for the first couple of miles to lose the rest of the field and then ease my pace up. My view is that if you burn off your competitors straight away they don't catch up. I steadied to a 7-minute mile pace but it was too fast and by 50km I was finding the distance very hard. If I had taken a slower pace earlier, I'm sure I could have completed the course under eight hours. But it was a great day."

■ **More info re the 2016 Race to the Stones, racetothestones.com**

Picture Threshold Sports

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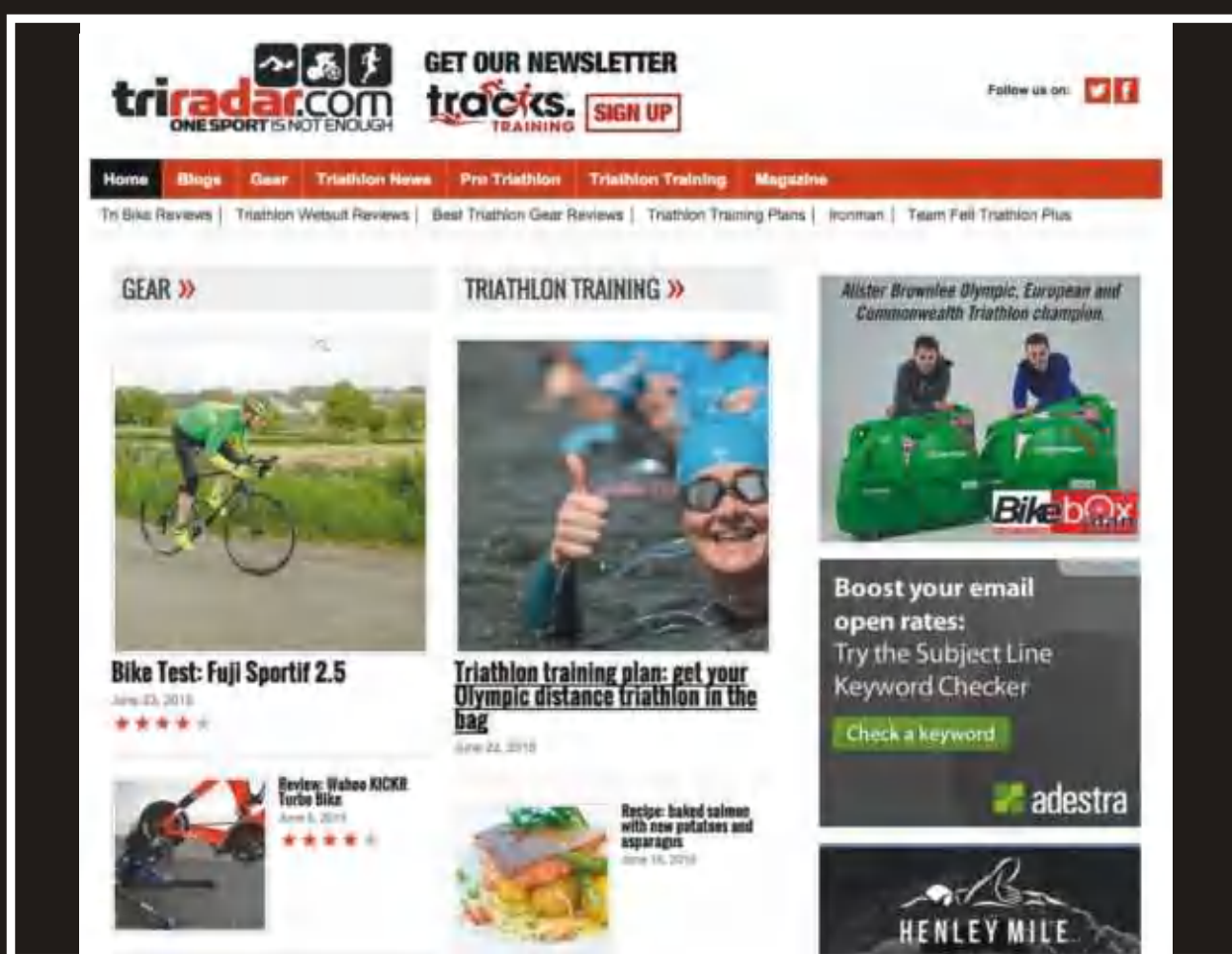
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